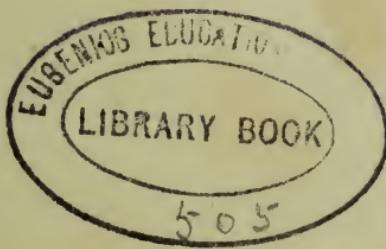


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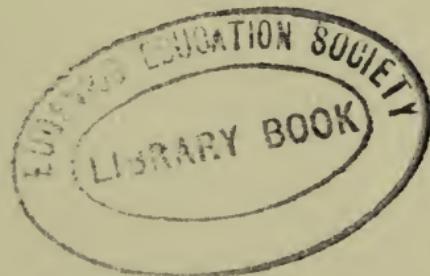
# POVERTY AND HEREDITARY GENIUS

A CRITICISM OF MR. FRANCIS GALTON'S  
THEORY OF HEREDITARY GENIUS

BY

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"THE CURSE OF INTELLECT," "AUNT JUDITH'S ISLAND," ETC.



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*Perhaps, in this neglected spot, is laid  
Some heart once pregnant with celestial fire ;  
Hands, that the rod of empire might have swayed,  
Or waked to ecstasy the living lyre :*

*But knowledge to their eyes her ample page,  
Rich with the spoils of time, did ne'er unroll :  
Chill penury repressed their noble rage,  
And froze the genial current of the soul.*

*Full many a gem of purest ray serene,  
The dark unfathomed caves of ocean bear :  
Full many a flower is born to blush unseen,  
And waste its sweetness on the desert air.*

*Some village Hampden, that with dauntless breast,  
The little tyrant of his fields withstood :  
Some mute inglorious Milton here may rest ;  
Some Cromwell, guiltless of his country's blood.*

*The applause of listening senates to command,  
The threats of pain and ruin to despise,  
To scatter plenty o'er a smiling land,  
And read their history in a nation's eyes,*

*Their lot forbade.*

GRAY.

## INTRODUCTION

THE nineteenth century is marked by a unique development in the progress of humanity—a development which in all probability must constitute the beginning of a new era in the evolution of man. And yet this development has attracted little notice, and the consequences which must result have been largely ignored.

Until lately all States have confined their attention to the material environments of their peoples; with their moral and intellectual powers they have but dealt haphazard. The masses have heretofore been treated as if they were fixed quantities in the moral and intellectual; no country has ever deliberately attempted by legislation to take means for the evolution of a future generation of its people higher in effective morality and intellect.

If we except comparatively isolated attempts in the past, we now find, for the first time in history, a very general movement in great nations not only to encourage, but to enforce the education of their peoples. The adopted forms of education may be, probably are, false in principle. But with that we are not now concerned. What we are concerned with is the fact that almost all great States now make it obligatory on their masses to give up part of their time, when young,

to the education of their natural ability. And this infers, in theory if not in practice, legislative development by education of their moral and intellectual powers.

This new departure would appear to constitute a distinct phase in the evolution of man. And the reason for so unique a development is not far to seek.

During the last half-century the command of man over not only the material but the forces of nature, has advanced so greatly that the possible output of labour for each individual has been increased perhaps tenfold. But it is also fact that for any individual to produce his full output of labour, he must be what we term educated.

Now, the more effective is the labour of the average man, the higher is the position of his State as compared to other States. It is, then, to the advantage of those interested in the welfare of any State that the labour of each individual should be rendered as effective as possible. And this can only be arrived at by educating the natural ability of the masses. This departure in the general education of the people may be—in all probability is—part of the orderly evolution of humanity. But the immediate cause that we can perceive is the pressure of environment; each nation must, for material prosperity, educate its people.

But while we thus find a reason for the new departure, I think we find also something else. We find the acknowledgment of a great principle: we find acknowledgment of the fact that the progress, possibly the survival, of a nation depends in the present day on the moral and intellectual advance of the average man. Physical force may still, as in the past, have effect on the progress or survival of a nation, but physical force

is now in great measure subject to the moral and intellectual, and this subjection tends to grow more and more definite—little David with his material sling conquered the giant Goliath; the little Jap with his intellect (and morality?) has conquered the giant Russ.

It might be argued—and not without reason—that popular education has resulted from the pressure of public opinion, and that the State gives as little as it possibly can, under the belief that full education of the people, morally and intellectually, would raise dangerous jealousy in the many without property against the few with property. But I would submit that, in theory if not in practice, the State has acknowledged that the progress, if not the survival, of the nation depends on the moral and intellectual evolution of *the people*.

One positive result of this new development is that, during the last three or four generations, there has been an advance, unique in history, in the educated natural ability of the peoples of Japan, of many European nations, and of the United States. And this result must, in the future, have cumulative effect.

If, therefore, as has been contended, each State is assured that for self-preservation it must continue to educate more and more highly its masses, then each State has to face and to deal with a constantly rising tide of advancing, educated natural ability in its people.

It is this which would appear to constitute the beginning of a new era in the evolution of man.

This tide, constantly rising, must, as already written, have cumulative effect. In theory, personal property would be the first thing attacked, and in practice we find this is so. Even at the present time Society and the State begin to be affected by organized collective movements in

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many countries tending towards various forms of socialism. And these movements are not mere excrescences ; they are part of the general movements of the body politic ; in some cases they affect the action of the State itself. They are a direct and natural result of the comparatively recent and unique advance in the educated ability of the masses.

In popular parlance, it may be said that while, up to the present, individualism has had full swing, there is now a growing tendency to determine progress by the more powerful pendulum of collectivism.

But there is one marked feature in this present strife between collectivism and individualism which would appear to have escaped notice.

It is very generally argued against collectivism that it would reduce all men to one dead level—that collectivism, established in the State, infers the destruction of individualism. This argument is based on confusion between what is material on the one hand, and what, on the other, is moral and intellectual.

What is the object of collectivism ? Is it equality in the moral and intellectual ? Undoubtedly not. Rightly or wrongly, the collectivist argues that the present economic state of society is such that the overwhelming majority of the people of any State are so bound that they cannot freely act and live as moral and intellectual beings ; his main object in dealing with the present economic state is the removal of existing restrictions on the moral and intellectual powers of the people.

It may be granted that State collectivism is at present but a beautiful, impossible dream. If, however, it were reality, what change would it effect ? It would effect change in the material,

in the economic state of the people ; no change, unless for the better, in the moral and intellectual. What present distinctions would be blotted out ? Those of wealth, and those of wealth only. A few individuals would suffer, but this suffering would be confined to deprivation of exceptional wealth.

In short, the marked feature in the struggle between collectivism and individualism which has, perhaps, escaped notice is this : It is no general struggle in the universe of the material, the moral, and intellectual ; it is a particular struggle for collectivism of wealth against individualism of wealth. Rightly or wrongly, the collectivist argues that equality of opportunity for all from birth would *increase* the power of individualism ; that is, if all were free morally and intellectually in opportunity, personal individuality (and so the distinctions between individuals) would strengthen.

If this argument be well based, it follows that collectivism would develop and strengthen individuality in the moral and intellectual. So there is no moral conflict between the two ; the conflict is purely material.

I may here point out that from the most bigoted Tory to the most rampant Radical there would appear to be common agreement—in theory—that it is the duty of the State to do all possible for the moral and intellectual advance of the people. I think, too, there is almost common agreement that the more generally wealth is distributed throughout the community, the more stable is the position of the State. I have in my mind, though I regret to write that I cannot give definite reference, a speech of the late Lord Salisbury himself, in which he spoke with satisfaction of the income-tax returns as showing that wealth was tending to more equal distribution amongst the people. Trade millionaires may be a most admirable class

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—though it will be found I do not deal with them, as they would not appear to be subjects of hereditary genius—but I cannot help believing that more than one mute, inglorious Milton would have spoken, more than one mute, inactive man of science or literature would have left for us works of genius, if blessed in life with an infinitesimal part of the wealth of even one millionaire. And if we consider history, it is to be greatly doubted whether the moral and intellectual level of any people has ever been raised by an increase in the number of its millionaires.

All above written is in emphasis of the point I make, that every great State has now to deal with a constantly rising tide in the educated natural ability of its people—a tide that is even now dangerously attacking personal property.

This danger, I submit, the State can only meet by a quickening of the moral and intellectual advance of the people.

There is, according to individual fancy, danger or hope that this rising, irresistible tide in the educated natural ability of the people must eventually overwhelm personal property. It is, then, the duty of every State to so quicken the moral and intellectual advance of its people that they may be capable of determining dispassionately what their future economic state shall be.

There are always two distinct and opposing schools of thought in every country which has reached a certain level of civilization. The one holds that the few are distinct from, and superior to, the many, not only in the material possessions of comparative rank, wealth, and social position, but in the moral and intellectual. And these naturally hold that the present economic state of the world is based on justice and equity, so that if any man—whether

born of the few rich or of the many poverty-stricken—be congenitally superior in the moral and intellectual, he can always assume or rise to the social position he is by nature fitted for.

The other school is imbued with an entirely different form of thought. This school holds that, in the moral and intellectual, there is no real distinction between the overwhelming majority born to poverty and the very few born to comparative rank, wealth, and social position. There is admission that the moral and intellectual may be more apparent with the few than with the many, but this is referred to environment, not to congenital distinctions. Self-respect is the basis of freedom in the moral and intellectual, and this school holds that there can be no full self-respect in the many, who by force of environment are bound to commonplace labour at the will of the few. Education, again, makes, even in the present day, hopelessly restrictive environment for the many. Property and poverty only determine ultimately where a boy shall be educated, and so determine for his life the degree of education of his natural ability; the poverty-stricken and friendless child of a man of genius must be marked for life by education at a board school; the emasculate child of a mindless millionaire or nobleman may—false metal though he be—obtain the hall-mark of “gentleman” by residence at Eton.

The former school holds that direct State interference—or, indeed, any direct interference at all—with the existing economic conditions of the country would be immoral and disastrous to the general welfare. The latter school holds that there can be no general moral and intellectual freedom, no real advance for the people, until some change is effected in their existing economic state.

But there is almost common agreement that “something must be done”—that our present posi-

tion requires some more or less radical change. The general interest displayed in questions of physical deterioration, of education, of housing, of feeding those in honest want, proves this common agreement.

Now, have we any material to our hands to show what effect poverty has on the output of the ability of the people?

We suffer from want of effective power in our people to deal adequately with the vast complexities of modern civilization. Does this want arise from our grade of genius or ability being too low? Or does it arise, not from want of genius or ability, but from the restrictive influence of our present economic state on the *action* of the moral and intellectual powers which our people already possess?

With thousands of others, I hold that poverty, which binds the overwhelming majority of our people to lifelong subservient labour, results in the disuse, and so the utter waste, of by far the greater part of the moral and intellectual force of our people. And I think there is material to our hands to prove the fact—material which is the more useful for the purpose because it has been gathered together in no way with the object of showing that poverty does so handicap the action of genius or ability.

The material I refer to is that contained in a work termed “Hereditary Genius,” written by Mr. Francis Galton. This work first appeared in 1869, but it still stands pre-eminent for its admirable and laborious collation of facts relating to hereditary genius and ability.

In this work Mr. Galton troubles himself very little with the economic state of mankind. His main object is to prove that genius, and, I think, ability, are subjects of heredity. But, incidentally, he suggests that poverty has no serious restrictive influence on the effective action of genius or ability:

he suggests that the man of genius born in the humbler ranks has appreciably the same chance of attaining reputation as he who is born in the higher ranks of life. So it is clear his work is not intended to support the views now put forward ; if anything, it is intended to oppose them. I cannot therefore be accused of having faked the material I use.

This little book consists of a commentary on the work of Mr. Francis Galton. I follow him more or less closely from chapter to chapter. His work is original in form, and he had himself to collate the material he uses. I fear, therefore, I may be found guilty of no little repetition ; for Mr. Galton in his new loom has innumerable threads, crossing in innumerable directions, to deal with.

One reason for my having adopted the form of a commentary is that the matter of Mr. Galton's work is so full and so original that almost each page deserves serious consideration. But my main reason is that a consecutive dissection of his work would appear to be the best method for the elucidation of certain important principles which his laborious collation of facts goes far to support. Three leading principles are :

1. That the grade of the exceptional genius or ability of the marked men of any race is conditioned by the average ability of the whole race.

If this be so, the State should be mainly concerned with the moral and intellectual development of the people at large.

2. That while most men of genius or exceptional ability who left to their descendants comparative rank, wealth, or social influence show descendants who attained reputation, barely one—if one—man of genius or exceptional ability who left to his descendants no rank, no wealth, and no social position, shows descendants who attained reputation.

If this be so, it cannot be alleged that poverty explains the fact : it cannot be alleged that with men poor like Bunyan, genius is not hereditary, while with men of rank and wealth like Sir Philip Sydney, genius is hereditary. The failure of the descendants of poverty-stricken men of genius to attain reputation must be referred to the fact of the restrictive environments of poverty.

3. That, generally, the influence of poverty on the overwhelming majority of our people is so oppressively restrictive that by far the greater part of their moral and intellectual power is wasted in disuse.

If this be so, all hope for advance in the future must lie in change of our present economic condition. If, indeed, there be a rising tide in the educated ability of the people, and if this tide already threaten danger, then, possibly, not only hope for advance, but hope for safety, lies in the same direction.

F. C. C.

*September, 1905.*

# POVERTY AND HEREDITARY GENIUS

## CHAPTER I

### HEREDITARY GENIUS

**W**HAT Mr. Francis Galton sets out to prove is shown in the following excerpts :

P. i. "I purpose to show in this book that a man's natural abilities are derived by inheritance, under exactly the same limitations as are the form and physical features of the whole organic world."

P. 148. "I argue that the more able the man, the more numerous ought his able kinsmen to be."

These two general propositions, however, he qualifies and restricts, for, on p. 64, he states : "Because one or both of a child's parents are able, it does not in the least follow as a matter of necessity, but only as one of moderately unfavourable odds, that the child will be able also. He inherits an extraordinary mixture of qualities, displayed in his grandparents, great-grandparents, and more remote ancestors, as well as from those of his father and mother. The most illustrious and so-called 'well-bred' families of the human race are utter mongrels as regards their natural gifts of intellect and disposition.

"What I profess to prove is this: that if two children are taken, of whom one has a parent exceptionally gifted in a high degree—say, as 1 in 4,000, or as 1 in 1,000,000—and the other has not, the former child has an enormously greater chance of turning out to be gifted in a high degree than the other."

The reader will at once see that what Mr. Galton "professes to prove" touches but a particular detail of the two general propositions referred to above. He, however, does deal incidentally with those two general propositions.

I shall herein try to worry out from Mr. Galton's facts and arguments what it is he has really proved. I shall then try to show that the resulting conclusions are not those which he himself arrives at.

Again, Mr. Galton continues the excerpt given above from p. 1 with the following allegation:

"Consequently, as it is easy, notwithstanding these limitations, to obtain by careful selection a permanent breed of dogs or horses gifted with peculiar powers of running, or of doing anything else, so it would be quite practicable to produce a highly-gifted race of men by judicious marriages during several generations."

I shall try to prove that, by Mr. Galton's own showing, it would not be possible, in the present state of human knowledge and experience, to produce any such highly-gifted race of men in the way he suggests. If by the word "race" Mr. Galton means "class," I still allege that no such highly-gifted class could be evolved by "domestic" selection. Even if such a class came into existence, it could not be the subject of stable inheritance.

But while Mr. Galton does not lay great stress on the advisability of breeding a separate highly-gifted class of individuals, he does lay great stress on the general failure of human intellect to perform adequately the demands made on it by modern civilization. And he holds that for the benefit of the race it is advisable to raise the average level of human intellect.

I shall try to show that we have no direct means to our hands to raise the average level of human intellect, and I shall try to show that the present level of human intellect is not only high enough to discharge all incumbent duties, but that it is capable of discharging still heavier duties, the present failure in discharge resulting solely from the restrictions of environment. I shall offer proof that at all periods of man's evolution there is invariably a reserve of capacity or force in human natural ability, environment being always restrictive on the full action—achievement—of natural ability. In other words, the present environments of humanity are of such a nature that at all periods a great part—probably by far the greater part—of man's natural ability is unused.

If this be so, then—as I shall try to show—it is change of environment that is required for the amelioration of the present state of the race. Only in change of environment can there be any hope for raising the level of the average ability of the race. Illustrious, even eminent men cannot be bred, because we know practically nothing of the laws governing their production.

## CHAPTER II

### REPUTATION AS A TEST OF NATURAL ABILITY

FROM what has been written already it will be understood that Mr. Galton, for proof of his theory, does not deal with men at large. He deals only with the small class of eminent men and the still smaller class of illustrious men, taking them as what may perhaps be termed central points for the radiations of arguments.

He defines his use of the terms "eminent" and "illustrious."

On p. 10 he defines an "eminent" man as one "who has achieved a position that is attained by only 250 persons in each million of men, or by 1 person in 4,000." He defines an "illustrious" man as "one in a million, and not a few as one of many millions."

He then makes a most important admission. He acknowledges that he can find no practical measure of natural ability itself.

On p. 37 he states :

"Is reputation a fair test of natural ability? It is the only one I can employ. Am I justified in using it? How much of a man's success is due to

his opportunities, how much to his natural power of intellect?"

In using the word "reputation" as a measure of natural ability, I think that he had in his mind rather the word "achievement," not the word "reputation." Throughout his work (with a few exceptions which may be neglected) he uses the word as meaning achievement. I think I am correct in stating that all the men he classifies for exemplification of his theory are men who have achieved. Indeed, with literary men he walks very warily, for, as he himself says, their reputation at any time may be no true measure of their achievement—only time can justify their achievement.

And I think that by reputation he means, not achievement in the abstract, but achievement which has been successful—that is, achievement which has received public acknowledgment and some measure of public reward. All the men he classifies are men who have been born to, or have attained, wealth, rank, or some public recognition.

Necessarily, therefore, he neglects those men unknown to the public—and there are thousands on thousands of them existing at all periods—who, gifted with exceptional ability, and yet free from personal ambition, expend all their energy in amassing knowledge or in labouring for others. They are ignored by him. Not having achieved marked personal success, they do not come within the category he uses of men gifted with exceptional natural ability. He neglects, also, all question of the inheritance of latent ability.

It is important to remember that our records of

achievement are records of success. We erect no monuments even to the giants on whose heads Newton stood. They have possibly reputation for what they did, but their achievements were not generally of such a nature as to bring them within Mr. Galton's category of men who have achieved.

I do not deny that achievement may be some measure of natural ability. And I should here point out that Mr. Galton himself qualifies his own use of the term "natural ability," for on p. 37 he states :

"By natural ability I mean those qualities of intellect and disposition which urge and qualify a man to perform acts that lead to reputation." And, further on, he states clearly that by natural ability he means capacity, zeal, and power of laborious work. I think we shall find later on that he uses "zeal" and "power of laborious work" in a restricted sense.

This qualification but weakens his argument when we consider general questions of inheritance—ability which chances on success is but a small (and not distinct) part of all inherited ability.

All we have, so far, to bear in mind is that throughout he uses successful achievement as approximately his one and sole measure of natural ability.

This somewhat long explanation has not been entered on with any object of belittling Mr. Galton's admirable work. It is, however, necessary as preliminary to my argument that the present environments of our race bar the overwhelming majority of our people from taking equal part in competition for reputation or achievement. It is only the very few who are wholly free to compete.

## CHAPTER III

### THE SWAMPING EFFECT OF POVERTY ON ACHIEVEMENT

**B**EAR in mind that Mr. Galton determines the number of "eminent" and "illustrious" men, in relation to the number of the population, not by any measure of natural ability itself, but by reputation or successful achievement taken as a measure of natural ability.

We have to consider two factors as to "eminent" men. How did Mr. Galton arrive at the number 1,000,000? How at the number 250?

It will appear hereafter that I contend both factors are incorrect.

He states (p. 7) :

"Let us see how the world classifies people, after examining each in her patient, persistent manner, during the years of their manhood. How many men of 'eminence' are there, and what proportion do they bear to the whole community?"

And, again, referring to a handbook called "Men of the Times," he says (p. 7) :

"Its intention, which is very fairly and honestly carried out, is to include none but those whom the world honours for their ability."

Hereby we see that he arrives at his 250 men of 'eminence' by the above classification, and by the measure of how the world honours them for their ability. Besides giving the authority of "Men of the Times," he gives that of the obituary of the *Times* for January 1, 1869, and that of other obituaries.

How does he arrive at his 1,000,000 ?

He states (p. 8) :

"Now, there are about 2,000,000 of adult males in the British Isles above fifty years of age ; consequently, the total number of 'the men of the times' are as 425 to 1,000,000, and the more select part of them as 250 to 1,000,000."

Why does he confine himself to males above fifty ?

He states (p. 8) :

"It takes time for an able man, born in the humbler ranks of life, to emerge from them, and to take his natural position. It would not, therefore, be just to compare the numbers of Englishmen in the book "Men of the Times" with that of the whole adult male population of the British Isles ; but it is necessary to confine our examination to those of the celebrities who are past fifty years of age, and to compare their number with that of the whole male population who are also above fifty years."

What does this statement amount to ? It contains an implicit admission that it takes longer for a man born in the humbler ranks of life than it takes for one born in the higher ranks to attain reputation (to achieve). It assumes that the man of exceptional natural ability born in humble rank

will always attain reputation. It assumes, also, that, by taking for comparison only men who are over fifty, the handicap of time is removed from those of humble rank, so that their natural abilities may be equally compared with those of higher rank by the measure of achievement.

In this way, and in this way only, Mr. Galton recognises the swamping effect of the environments of poverty.

We must consider at some length this swamping effect of the environments of poverty on achievement, and incidentally on the development for action of natural abilities.

In the first place, Mr. Galton's method is mathematically incorrect. The period of man's life is practically a fixed period ; certainly natural abilities cannot achieve material success after eighty years. It is clear, then, that by taking comparison between men over fifty he still leaves those born in the humble ranks under a handicap, for time is unquestionably a factor in achievement, and by admission men of humble rank can only attain late in life that reputation which others may have obtained in earlier life. The life experienced before fifty is always an important "time," environment affecting success after fifty.

This is directly seen in the examples used by Mr. Galton.

He takes examples of Judges, statesmen, English peerages, commanders, literary men, men of science, poets, musicians, painters, divines, oarsmen, and wrestlers.

Some of the classes dealt with are, on their face,

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practically closed to any competition at all from men born in the humbler ranks. But the point now made is that for every class except the last two, poverty is a swamping environment against success, *quâ time*. The man born in humble rank has not the same time for success, and time is a factor in success.

But how, generally, does Mr. Galton deal with the swamping effect of poverty on achievement?

In the first place, we must clearly understand what definition he uses for natural ability, though this involves some repetition. He states (p. 37) :

“ By natural ability I mean the qualities of intellect and disposition which urge and qualify a man to perform acts that lead to reputation. I do not mean capacity without zeal, nor zeal without capacity, nor even a combination of both of them, without an adequate power of doing a great deal of very laborious work. But I mean a nature which, when left to itself, will, urged by an inherent stimulus, climb the path to eminence, and has strength to reach the summit—one which, if hindered or thwarted, will fret and strive until the hindrance is overcome, and it is again free to follow its labour-loving instinct.”

It is clear from this definition that he does not use the words “natural ability” in any general sense : his definition is a restrictive definition. So he does not deal with natural ability at large. And, too, the definition itself requires dissection.

By zeal, I think Mr. Galton most clearly does not mean zeal : he means personal ambition, which is but a restricted form of zeal. Or, if I

be wrong in this, I still think that most of the instances of illustrious and eminent men which he relies on show but zeal in the restricted direction of personal ambition.

By labour-loving instinct I think he does not mean sheer love of labour ; he means love of labour for self-advancement. In all classes of life we find our Lord Actons and Howards—men of exceptional natural abilities, with zeal for knowledge or zeal for the welfare of others, but no zeal for personal material achievement :—and Mr. Galton certainly refers in no way to the labour-loving instinct implanted in the majority of our labourers.

Mr. Galton deals with a very restricted class of men of natural ability. We shall find, too, that this restricted class is taken almost wholly from men who possess *some* property. This in itself shows a serious neglect of the swamping effect of poverty on achievement.

I think, too, though zeal or personal ambition may result from inherited disposition, it is largely a question of environment. And in this Mr. Galton would appear partly to agree, for he says (p. 46), referring to statesmen :

“ Again, we have seen that a union of three separate qualities—intellect, zeal, and power of work—are necessary to raise men from the ranks. Only two of these qualities—namely, intellect and power of work—are required by a man who is pushed into public life, because, when he is once there, the interest is so absorbing, and the competition so keen, as to supply the necessary stimulus to an ordinary mind.”

And is not "power of work" very greatly a question of education, of environment? Surely the home environments of a Darwin are more likely to develop power of intellectual work in those subject to them than the home environments of an Essex labourer? In the former case zeal and the labour-loving instinct are directed and educated to mental achievement, in the latter they are directed and educated to manual labour. The personal equation undoubtedly comes in, but environment must have no little effect on the results not only of zeal or personal ambition, but of the labour-loving instinct. I hold very strongly that zeal (not personal ambition) and love of labour are instinctive in the great majority of our race. The wonder is that this great majority should labour at all when only mean, soulless labour is open to its members.

Mr. Galton (p. 196) himself states:

"It therefore appears to be very important to success in science that a man should have an able mother. I believe the reason to be that a child so circumstanced has the good fortune to be delivered from the ordinary narrowing partisan influence of home education. . . ." P. 197: "It is, I believe, owing to the favourable conditions of their early training that an unusually large proportion of the sons of the most gifted men of science become distinguished in the same career."

Herein, and quite rightly, Mr. Galton makes achievement the result not of natural ability, but of natural ability developed under favourable environments. Apply this argument, not to men of science alone, but to all men generally, and we see

clearly that achievement is not the result of natural ability alone ; it is the result of some natural ability coupled with favourable environments.

The environments of poverty are most unfavourable to achievement, and by introducing his "time" limit Mr. Galton does not get rid of this handicap of environment. I think it will appear hereafter very clearly that he has not fully considered the swamping effect of poverty on achievement. If so, both his factors—250 and 1,000,000—are incorrect.

NOTE.—Following Mr. Galton as closely as may be in the order of his argument, I now deal with the various classes of men set out and relied on by him for exemplification of his theory. I quarrel very little with his facts ; but, though acknowledging the great value of his work, I demur to the conclusions he has arrived at, and to the theory he propounds.

I criticise now but in detail. These details concern the general questions of (1) reputation (achievement) as a test of natural ability ; (2) the swamping effect of poverty on achievement—even on reputation. So, necessarily, they have important bearing on the question of genius being hereditary or not hereditary, and on the question of what the remedy should be for the present preposterous economic state of our race.

## CHAPTER IV

### MEN OF THE PEN AND ARTISTS

**M**R. GALTON (p. 38) first takes in hand men of the pen and artists. His reason for this is clear : achievement in literature or art is comparatively free from nepotic, social, or monetary influence. I write "comparatively" free because, even in literature and art, environment has great effect on achievement ; and it must always be borne in mind that Mr. Galton throughout measures natural ability by achievement, and achievement alone. But, though environment has effect, successful achievement in literature and art generally infers natural ability. At the same time, it must be remembered that certain men of literature and art who would *now* be termed eminent will, fifty years hence, be forgotten, while certain other men now not even eminent may in the future be judged illustrious.

But success in literature or art by no means depends solely on intellect, zeal (personal ambition), and power of work. It depends largely, as I have written, on environment. The education and social surroundings of the man of humble rank do not

give him the same environments tending to the evolution in him of zeal and power of work in the intellectual as do those of the man more fortunately born. However naturally gifted the son of a labourer may be, education till thirteen at a board-school and then work at the plough do not tend to evolve in him zeal and power of intellectual work as does a higher form of education with more invigorating social surroundings. Herein we see the swamping effect of poverty.

But it is also true that in literature and art we find a larger percentage of eminent men rising from humble rank than in any other path of achievement, unless, possibly, in science. With this I think Mr. Galton agrees (see p. 46). Why is this?

Partly because in literature and art men of humble rank are not handicapped so greatly as in other directions of achievement by want of nepotic, social, or monetary influence. But, beyond this, the environments of poverty assist achievement in literature and art. Thus I admit that the environments of poverty are, in some degree, favourable for achievement; but, still, the question is one of environment, not of natural ability. For success therein there must doubtless be natural ability to see nature itself, even if the microscope or a magnifying glass be used. At the same time, however, the question of environment comes in. The man of natural ability who is closely associated with nature is so enabled to understand it better than the man at a distance, and, too, the man so closely associated with nature has more material for his natural ability to work with. Besides this, the man

so environed that he can regard nature (including humanity) from an unprejudiced point of view is best placed to record nature as in truth it exists.

Now, the man environed by wealth or social rank is far removed from nature. With his restricted class of associates, his materialized surroundings of luxurious civilization, he has acquaintance with but a "crossgartered" part of nature, and, from the prejudices of social standing, he cannot see and cannot record nature as in truth it exists. The man born in humble rank is free from these limits. If he be affected by a prejudiced outlook it is a prejudice in favour of humanity at large as against materially-favoured classes.

In this we see how the environments of humble rank assist achievement in literature and art.

Thus we should expect to find *achievement of genius* in literature and art exemplified exceptionally in men born in humble rank ; for, though there may be no measure of genius itself to our hands, we can argue that for achievement by genius there must be exceptional natural ability coupled with those environments which best give opportunity for genius in action.

And we undoubtedly find that this is so in fact.

Shakspere found the material for his genius to work on from his general acquaintance with all forms of humanity ; he wrote of the highest and lowest truthfully because of his unprejudiced human standpoint. A duke, a millionaire, even a Lord Bacon, though gifted with abnormal natural ability, could never have held up a mirror to nature, or, had he done so, it could never have reflected the

hovel as truthfully as the palace, the peasant as truthfully as the peer. No one would suggest that Molière, born in rank a courtier of Louis Quatorze, could have achieved as Molière the barber's son achieved. Even Goethe owed much to the stain in his blood of which he was possibly no little ashamed.

Were not the achievements of Dickens and Thackeray—to take a modern instance—largely conditioned by their environments ?

The question is one of environment. It is true that throughout history there has not been one single man born to high social rank and wealth who has given us achievement of the highest genius in literature and art. But I do not think this proves mental weakness in the class. Huxley was right, I would suggest, in holding that the probability of natural ability is the same for all, rich and poor, highly born or humbly born. It is simply that the environments of social rank and wealth swamp the possibility of the highest achievement in literature and art. But while poverty in itself constitutes favourable environment for the free exercise of natural ability in art and literature, it must not be forgotten that it is most unfavourable for reputation ; for poverty infers enforced mean labour which absorbs much time, and so leads to want of social influence, and want of intellectual education. This is why, as Mr. Galton shows, only the most highly gifted of those humbly born attain reputation in art or literature.

It will be noticed that I have above referred only to men of genius in literature and art. But how about men of eminence ?

Here I can put Mr. Galton to a very clear test.

He makes a distinction between men as born in the humbler and higher ranks. The distinction, I submit, is indeterminate ; it is far too elastic for scientific use. There is no common agreement as to what humble rank and high rank mean.

If we want to determine the effects of economic environments on the achievements of natural ability, we must have some satisfactory economic distinction or, rather, we must have the nearest economic distinction which is to our hands.

I submit the most satisfactory economic distinction is in property. Then what have we ?

We have in England an overwhelmingly large class with no property ; we have a very small class with property.

Even this distinction, I admit, is not absolute, for men of no property gradually merge into men of property. There is no great gulf fixed between them. But the distinction is certainly more definite than that between men of humble and high rank.

The distinction is this : those without property work at the will of those with property ; they can only obtain the labour necessary for their livelihood at the will of others. Those with property can always obtain the labour necessary for existence at their own will. This makes an economic distinction between the two classes almost as wide as the past distinction between masters and slaves. But it marks also a very important sentimental distinction. The man of average ability with intense self-reliance is far more likely to achieve than the man of great natural ability who is wanting in self-

reliance. And the environments of no property, the consciousness that labour for existence depends on the will of others, tend to weaken that self-reliance which the consciousness of possessing property tends to strengthen.

Now, does Mr. Galton hold that this economic distinction between property and no property—mark the fact that it is a *material* distinction of environment—constitutes a sharp distinction for natural ability? That the overwhelming majority without property have a low level of, or no, natural ability, and those with property have relatively high natural ability? I think not, for he states (p. 38) :

“I believe, and shall do my best to show, that, if the ‘eminent’ men of any period had been changelings when *babies*” (my italics), “a very fair proportion of those who survived and retained their health up to fifty years of age would, notwithstanding their altered circumstances, have equally risen to eminence.”

This does not state, but appears to infer, that Mr. Galton does not believe the offspring of the great no-propertied class are less intellectually gifted, on the average, than the offspring of the small propertied class.

But his position is made clear by his treatment of the examples he gives. When dealing with the eminent relations of Judges, he states (p. 60) :

“Another fact to be observed is the nearness of the relationships in my list. . . . Also, though a man has twice as many grandfathers as fathers, and probably more than twice as many grandsons as sons, yet the Judges are found more frequently to

have eminent fathers than grandfathers, and eminent sons than grandsons. In the third degree of relationship the eminent kinsmen are yet more rare, although the number of individuals in those degrees is increased in a duplicate proportion."

Now, bear in mind that the swamping effect of ill-advised marriages is not in question. Mr. Galton deals with heredity as it in fact exists.

Then what necessary deduction is to be made from his statement ?

That at any given period any living eminent man is not a present representative of a family which always has been and probably always will be eminent. He represents but a passing phase of eminence. There is probability that his father and grandfather were eminent, probability that his son and grandson may be eminent ; but there is little or no probability of his earlier ancestors or later descendants being eminent. He is but the summit of a passing wave of eminence in a family of general smoothness of average ability.

Again, from this the deduction follows that, if the living eminent men at successive periods of three, or more, generations be considered, we shall find that the eminent men of any three generations are not related by heredity to the eminent men of any other three generations.

We have, then, for the whole population a general average of ability, with, at any period, waves of eminent ability which rise unrelated, wave to wave, and at the end of the period fall back into the general smoothness, the average of ability.

I think these deductions are to be fairly drawn

from the conclusions Mr. Galton arrives at, for, though he refers to Judges in particular, the words of his which I have quoted appear to be applied very generally.

Surely, then, we are justified in assuming a general average of ability throughout the whole population, irrespective of the possession or want of property?

It might, perhaps, be argued that there are, for our population, two distinct classes of average natural ability—the great class of the no-propertied with a low average, the small class of the propertied with a high average.

But Mr. Galton shows that the “waves of eminence” rise from the level of both classes. He states (p. 39), as to men from the humbler ranks :

“There are many such men in the ‘eminent’ class, as biographies abundantly show. . . . We find very many who have risen from the ranks who are by no means prodigies of genius.”

And remember that it is not at any one fixed period that these waves of eminence from the humbler ranks have risen; they are rising and falling at all periods.

Again, “eminence” is a comparative term; the factors determining “eminence” depend always on their relation to the general level of ability. In the kingdom of the blind the one-eyed (or myopic) man is King. So men of “eminence” must always be comparatively few. As the men of “eminence” rise from both classes, their ancestors (who are many) and their descendants (who are many) must return to the general average level of ability. And the distinction between property and no property

is purely material—that is, economic—so that there is nothing to show why this return should be to one or the other of the said distinct classes. Indeed, when we consider how small the propertied class is, this return must, on the average, be rather to the no-propertied than to the propertied class.

I think, too—though I admit I am not in a position to offer any satisfactory proof—that if at any period in Great Britain we consider men of property, we shall find that a large proportion have, within a few generations, risen from the no-propertied classes, and if we consider the no-propertied classes we shall find that a large proportion have descended from the propertied classes. Possibly, too, names of families may be taken as evidence of blood-relationship. And if we consider these names, we shall find all existing and extinct families of exceptional property largely represented by offshoots in the no-propertied class. The most noble of us suspect the existence of poor relations.

Surely, then, we can make no hard and fast line of distinction in ability between the no-propertied and propertied classes? I do not deny for one moment that there are always, in proportion, many more eminent men in achievement arising from the propertied than from the no-propertied class. It will be found I rely on this as a fact. What I maintain is that Mr. Galton, if correct, proves that property or no property cannot determine natural ability or no natural ability.

The reader must mark here the distinction I raise between natural ability and the achievements of natural ability.

If, too, Mr. Galton holds that property or no property is a measure of ability, he must make men like Shakspere, Molière, Watts, Stephenson, Faraday, d'Alembert, and numberless others, exceptional monsters of intellectual excellence. I do not think he assumes that, as a rule, men of genius spring from the propertied classes.

Now, bear in mind we are still dealing with men of literature and art, the class most favourable for the establishment of Mr. Galton's contention. And bear in mind that the no-propertied class form an overwhelming majority of our population.

Then, if poverty has little or no swamping effect on the achievements of natural ability, what follows directly?

This follows: those without property form an overwhelming majority of our population. Therefore, an overwhelming majority of all men who have achieved in literature and art should be part of the no-propertied class.

Most unquestionably we do not find this to be the case. We find, indeed, that, for abnormal capacity, achievement is rendered possible in the highest degree by the environments of poverty. But for natural ability, though in the same measure the environments of no-property assist achievement, we find that the environments of poverty do, on the whole, handicap achievement most seriously.

Mr. Galton is on the horns of a dilemma. The no-propertied classes do form an overwhelming majority; an overwhelming majority of eminent men in literature and art do not arise from the no-propertied classes. If the possession or want of

property does not affect the inheritance of natural ability, then it must be the environments of no-property which handicap achievement in literature and art.

As to this, Mr. Galton states (p. 39) :

"Now, if the hindrances to success"—that is, the environments of poverty—"were very great, we should expect all who surmount them to be prodigies of genius. The hindrances would form a system of natural selection by repressing all whose gifts were below a certain very high level. But what is the case? We find very many who have risen from the ranks, who are by no means prodigies of genius; many who have no claim to 'eminence' who have risen easily in spite of all obstacles. The hindrances undoubtedly form a system of natural selection that represses mediocre men, and even men of pretty fair powers—in short, the classes below D; but many of D succeed, a great many of E, and I believe a very large majority of those above."

I should explain that, neglecting "illustrious" men, Mr. Galton ranges men in natural ability from A to G (seven classes), A being the lowest.

This statement must be dissected.

I have already dealt with the fact that "prodigies of genius" born in humble rank *do* achieve, and I have tried to explain why none born in the highest rank and with exceptional wealth ever achieve supremely in literature and art. In this explanation I have introduced a factor not used by Mr. Galton—the assistance of poverty environments to achievement in literature and art.

But then Mr. Galton continues :

"The hindrances"—*i.e.*, if very great—"would form a system of natural selection by repressing all whose gifts were below a certain very high level."

It is submitted that this statement is incorrect scientifically. And does the excerpt I have just given from p. 39 support it?

In the first place, men of genius do not differ in kind ; they differ only in degree—however great that degree—from men of natural ability. Again, the classes of men, A, B, C, D, E, F, and G, do not exist. The classes are mere arbitrary distinctions set up, quite rightly, by Mr. Galton for the sake of simplicity ; they merge insensibly one into the other. Again, Mr. Galton does not assume to classify men by degrees of natural ability ; he classifies them by degrees of achievement. How, then, can he support his statement that the hindrances of humble rank will repress only those below some *fixed* high level ? Even in achievement there is no real classification ; there are but gradations of comparative success merging successively each into each.

Where fix the line of repression ?

Poverty is not a flood at a fixed high level, destroying all below, leaving high and dry all above. It is a general deterrent, affecting *all* in degree. Poverty, I now assume, does not affect the inheritance of natural ability, but it does affect each individual in degree in achievement. We may vulgarly take it that poverty is a handicap, so that the humbly born may come in at the finish ; but, if so, each is lower placed than he would have

been if not handicapped. A very large number must be unplaced or even refused entry.

A particular example is given by Mr. Galton himself. He states (p. 38) :

“Thus, to take a strong case, it is incredible that any combination of circumstances could have repressed Lord Brougham to the level of undistinguished mediocrity.”

Consider this case. The question is not one of natural ability ; it is one of achievement.

Would Lord Brougham, if born the son of a labourer, have been marked by the same high achievement ? If he had achieved, would it have been in the same direction ? I admit that with his enormous personal force, his absorbing personal ambition, he might have risen to be a marked man. But in what direction ? Would anyone contend he could *as probably* have risen to be Lord Chancellor ? Might he not very possibly have been distinguished as a demagogue—a class, by the way, ignored by Mr. Galton—or imprisoned as an arch-poacher ?

Poverty, I say, would have acted as a most serious deterrent on achievement in his case, and that is all I contend for.

Again, Mr. Galton, in support of his argument that birth in humble rank has little deterrent effect on achievement by those highly gifted, refers to the fact that a “small attorney,” a “coal-fitter,” a “sheriff’s officer,” and a “barber” fathered Lord Chancellors.

But I think he cannot give one single example of a Lord Chancellor having risen directly from the

no-propertied classes. All the Chancellors above referred to were sons of men with property—the “coal-fitter,” in fact, died as a merchant worth nearly £20,000. In literature, science, and art, however, men have risen directly from the no-propertied class. How is this distinction to be accounted for? Surely by environment, and environment alone.

Again (p. 40), Mr. Galton states :

“Another argument to prove that the hindrances of English social life are not effectual in repressing high ability is that the number of eminent men in England is as great as in other countries where fewer hindrances exist. Culture is far more widely spread in America than with us, and the education of their lower and middle class far more advanced ; but, for all that, America most certainly does not beat us in first-class works of literature, philosophy, or art. . . . I argue that, if the hindrances to the rise of genius were removed from English society as completely as they have been removed from America, we should not become materially richer in highly eminent men.”

For the purposes of my present argument I might admit every word of Mr. Galton’s above recorded. All I want to show is that in America a larger proportion of the no-propertied class do achieve on the average than with us. But I must criticise what he alleges, for it appears to me based on error.

He omits altogether consideration of what I may term national environment.

If Shakspere had been born a Frenchman, Molière an Englishman, would not the character of

their achievement have been seriously affected by their change of environment?

If any 100,000 Englishmen, including in their number 25 men of "nascent eminence," were transferred as a colony to the middle of British Africa, would not their new environments determine in great part the achievements of their natural ability?

As Mr. J. M. Robertson has so admirably shown, the distinctive achievements of nation compared with nation depend not so much on distinctions of race as on national environment. And this is peculiarly transparent in the United States.

There is not a race or class of humanity but it has had part in building up the American people. And yet a distinctive American people *has* been built up. The magic is in the overwhelming force of the environments of the particular country.

The natural abilities of the new country are naturally (not unnaturally) directed into channels of achievement quite different from those into which the natural abilities of an old country like England flow. Mark here, again, the distinction between natural ability and the achievements of natural ability. The main channel is still for achievement in the accumulation of capital. Invariably, with rising countries, this is the necessary channel first used. It is when capital has been accumulated that a foundation is laid for more diverse channels on a higher grade for achievement in literature and art.

No nation in evolution, however high the level of natural ability of its inhabitants, ever blossoms out suddenly in literature and art apart from the influ-

ence of environments. It was the particular and peculiar, if isolated, economic stability of Greece that was its foundation for unique excellence in literature and art ; it was the looser, less self-implicated economic stability of Rome that was its foundation for forms of literature and art less particularized in character than those of Greece. No one can deny the exceptional natural abilities of the Russians, but their achievements of natural ability are certainly conditioned by the particular environments of the country.

If, however, we consider the Americans as in fact they exist, have not their achievements of natural ability been far greater than could have been expected ? Consider this nation of men ;—men whose immediate duty is not only to build the foundations of a great nation, but—even still, in great measure—to build and establish their own homes. What have they done ?

In literature they run a close race with Europe ; in art they are struggling for self-expression. Granted that in both they are now mainly engaged in absorbing past European experience, they show still a freedom in exercise of imagination and an eclecticism in power of imitation which have led no few to predict that they will soon outdistance Europe. And in philosophy ? If astronomy, physical science, and metaphysics can be considered, I think the Americans are not undistinguished.

But all this is beside the question. The real point is that in America the achievements of natural ability do not flow in the same channels as in Eng-

land, so that any comparison of achievements in the same channel cannot give any measure of relative natural ability.

No one, for instance, would suggest for a moment that there has been a sudden outburst of higher natural ability in the Japanese within the last generation. And yet their present generation is marked by a sudden outburst in high achievement that, by Mr. Galton's measure, would prove such an outburst. The modern high achievement of the Japanese is purely the result of changed environment.

Unquestionably, in their own channels of achievement, the Americans have "whipped Creation." These are channels of practical, material, unsentimental achievement. And in such achievement I think they stand first in "eminent," if not "illustrious," men.

I think I have now dealt with all the leading arguments of Mr. Galton necessary for my purpose so far as men of literature and art are concerned, and I have perhaps shown that in taking successful achievement as his measure of natural ability Mr. Galton has left out of consideration a majority—probably a large majority—of men of natural ability and neglected almost entirely the very great influence of environment on success.

We have now to deal with the examples of men eminent in literature and art that he treats in detail. And these must be considered separately.

## CHAPTER V

### LITERARY MEN

LET us try and find out what facts can be clearly established as to the particular literary men referred to by Mr. Galton.

In the first place, bear in mind that I divide men economically into two classes—one an overwhelmingly large class without property, the other a small class with property. If I accept Mr. Galton's division of humble and high rank, I might include many more in the *large* class—for instance, parish clerks and market-gardeners—and so increase the disparity. Bear in mind, too, that Mr. Galton admits there are many men in the “eminent” class who have risen from the humble ranks of society, and that he admits we find many who have risen from the ranks who are by no means prodigies of genius.

Mr. Galton (p. 172) gives thirty-seven examples of eminent literary men.

What do we find?

Not one of the thirty-seven has risen from the class without property—Bunyan, Burns, and Carlyle, for example, are not, I think, even referred to. Only two—Porson, son of a parish clerk, and

Roscoe, son of a market-gardener—have risen from the humbler ranks.

Now, I do not accuse Mr. Galton of having unfairly picked his examples—those given by him show some evidence in immediate descent of hereditary ability (a reference to the relations of Porson and Roscoe will show why I use the term hereditary ability and not hereditary genius)—but, while I do not make this accusation, I argue that the particular examples he has taken prove he has neglected altogether the swamping influence of the environments of poverty and the favourable influence of environments of wealth, rank, and social position on achievement.

In this connection he states (p. 172) :

“ It is remarkable to find how little is known of the near kinsmen of many of the greatest literary men, especially those who lived in ancient times.”

Surely there is nothing remarkable in this ; it is exactly what we should expect to find, and this because a far larger proportion of men from the humbler ranks have achieved in literature than in any other line, unless, perhaps, in art and science. One would not expect to find any genealogical tree of the family of a Bunyan or a Burns. Even the records of the richest and most noble families ignore offshoots of no property.

Again, if we consider the influence of property or no-property on achievement (not on hereditary ability), who would be more likely to show relatives of achievement, the moneyless Bunyan, Goldsmith, Samuel Johnson, De Foe (I might include

Shakspere and Molière), or the well-born and wealthy Sydney? Those relations who have achieved are more easily discovered than those, however great their natural ability, who have not achieved.

Compare men of literature with Judges. I will assume there is nothing to choose between the two classes so far as natural ability goes; and Mr. Galton does not allege that the particular characteristics which there must be for achievement in law are more probably the subject of heredity than those which there must be for success in literature (see p. 171). Bear in mind, too, that achievement as a Judge imports rank, wealth, and social influence as environments, and that the same is not true for success in literature. Men successful as Judges found families—that is, leave wealth and social standing behind them for the benefit of their descendants—and this is not true for success in literature. A glance at Mr. Galton's lists will show how many Judges have founded families. I think I am right in stating that no one man of literature has by achievement in literature alone founded a family. It is true that a man like Dr. Johnson or Thackeray might have pushed his son, if he had had one. But by what means? By means of the favourable environments of social influence he had attained to. A Bunyan could not have so pushed a son.

Further, bear in mind that the examples of Judges taken by Mr. Galton are not picked; the Judges are taken as a class. But as to men of literature he states (p. 167):

"Amongst authors, who are the most eminent ? This is a question I feel incompetent to answer. . . ." P. 168 : "I have therefore simply gone through dictionaries, extracted the names of literary men whom I found the most prominent, and have described those who had decidedly eminent relations, in my appendix."

Then what have we ?

We have before us practically the full class of Judges ; we have before us only a very small purposely-selected class of men of literature.

Mr. Galton says (p. 171) :

"In the meantime, we may rest satisfied that an analysis of kinsfolk shows literary genius to be fully as hereditary as any other kind of ability we have hitherto discussed."

This would be possibly true if any analysis of *natural ability* were before us. I rely on its being true, with due regard to the fact that ability may be patent or latent. But we have no such analysis before us ; we have only an analysis of achievement, of picked men who had kinsfolk who achieved.

Now, I affirm as undoubtedly true that at any period the number of living men eminent in literature and art is always very much greater than the number of Judges, eminent or not—some Judges are not eminent in ability. The number of Judges at any period is fixed by environment. This number has no relation to the number of men with mental capacity sufficient for the bench ; but the number of men of literature and art is not so restricted. The number may be, possibly is, so great that many must starve. We ought, then, at any period to

find living a far larger class of persons of natural ability related in descent to eminent men of literature and art than of such persons related to Judges. I admit these people may be, probably are, living ; but I say Mr. Galton cannot find them, because they have *not achieved*. And he most certainly does not allege that he has found them.

Take any twelve Judges of the present time ; take any twelve men eminent in literature or art—not picked men. I affirm that in achievement the Judges will be found, on an average, to have a far larger number of eminent relatives.

Mr. Galton, for his purpose, is quite justified in deliberately picking out those eminent men of literature who have eminent relatives ; but, for my purpose, I am justified in comparing any number of eminent literary men with the same number of Judges.

I affirm that, on the average, the eminent man of literature has far fewer relatives who have achieved than have the Judges.

Why is this ?

It is not from want of inherited natural ability ; Mr. Galton agrees in this (p. 171). The failure in relatives' achievement is because the eminent man of literature has not the same wealth, social influence, and opportunity as the Judge, so that his relatives are heavily handicapped, not in the inheritance of ability, but in achievement.

But we can go a step further. An argument can be based even on the list of literary men that Mr. Galton has, quite rightly, made for his own purposes.

All the relatives of the Judges relied on by Mr.

Galton may, I think, be fairly termed "eminent." But is this so with the relatives of his eminent men of literature? Has he not a little expanded the term "eminent" in order to prove that even his picked list of men of eminence in literature shows a satisfactory number of eminent relatives?

He himself says (p. 169) :

"I will now give my usual table, but I do not specify with confidence the number of eminent literary men contained in the thirty-three families it includes. They have many literary relations of considerable merit, but I feel myself unable, for the reasons stated at the beginning of this chapter, to sort out those who are eminent."

The reasons referred to are the multitude of works of famed authors.

What this sentence means I am not quite sure, for he also states (p. 168) that in making his list he has "extracted the names of literary men whom I found the most prominent, and have described those who had decidedly eminent relations in my appendix."

There appears to be some confusion here. The point is, Mr. Galton has given in his appendix the "decidedly eminent relations" of eminent men of literature or he has not.

In one place he says he has done this, in another place he seems to throw doubt on what he has done.

But I think—as he had this multitude of works of famed authors before him—it may be fairly assumed that he has in his list picked out those eminent men who had the largest number of relations who had achieved.

If I am correct in this, what do we find ?

Almost without exception the Judges had relations marked by exceptional achievement.

With some exceptions the literary men relied on by Mr. Galton had not relations marked by exceptional achievement.

I must explain what I mean at some length.

And first I must explain why "a multitude of works of famed" (and unfamed) "authors" exists.

It is because the average ability of each one of the forty millions of the British Isles is far higher than Mr. Galton imagines, and because, by taking successful achievement as the measure of natural ability, he thereby deals only with a small and restricted class of men of natural ability. He ignores altogether the very great amount of good work which has been done by men who have not attained reputation by achievement.

The competition amongst men for place, wealth, and, in some measure, for successful achievement in art, science, and literature, takes place on equal terms between the members only of a very small minority ; the great majority, marked by want of property, are either refused entry to the race, or, entering, are heavily handicapped, spite of the fact that poverty is in some degree favourable for the exercise of ability in art and literature. Their natural abilities have no free play in effective action to establish reputation.

But in what lines will the natural ability of this great majority strive to find room for action ?

Along the lines of least resistance.

And unquestionably the lines of least resistance

for those of humble rank are in literature, art, and science.

In literature, because therein the want of property, definite education, and social influence is of least deterrent effect.

In art, because therein the want of property and social influence is of least deterrent effect, while Nature herself can, in some measure, supply education.

In science, because therein Truth (not the triune god of Wealth, Rank, and Power) is God, so that poverty, though a deterrent, constitutes but a material, not social or spiritual, burden.

This is why we find so large a multitude striving for achievement in the particular channels of literature and art, and why we find that so many, comparatively speaking, rise from the ranks in science. It is not only because natural ability finds its natural outlet in these three directions that we find so many following them ; it is also because these are the lines of least resistance for the action of natural ability in the great majority of our population.

Mr. Galton himself says (p. 69) :

“ The reader must guard himself against the supposition that because the Judges have so many legal relations, therefore they have few other relations of eminence in other walks of life. A long list might be made out of those who had Bishops and Archbishops for kinsmen. . . . There are numerous relatives who are novelists, physicians, Admirals, and Generals.”

As a matter of fact, he relies on these relations of diverse achievements for the proof of his theory.

Therefore, very clearly, he does not rely on hereditary genius as showing itself always in the same direction—the commander's son as a commander, the statesman's as a statesman, and so on. When, then, we find so many attempting to achieve in literature and art, and so comparatively few in law, we must look not only to the guiding force of natural ability for explanation, but also to environment.

I now attempt to show that Mr. Galton has somewhat expanded the meaning of his term "eminent" in order to prove that even the picked men in literature that he relies on for argument present a satisfactory number of eminent relatives.

I will first take a few strong instances :

EMINENT MEN.	RELATIVES.
1. François Fénelon -	Great nephew, François Louis : <i>littérateur</i> .
2. Porson - - -	Father: a weaver and parish clerk ; a man of excellent sense and great natural powers of arithmetic. Mother : a housemaid at a clergy- man's, who read his books on the sly.
3. Roscoe - - -	Son, Henry: wrote his father's life ; "Lives of Eminent Lawyers."
4. Le Sage - - -	Son : a Canon ; he was a jolly fellow, with whom Le Sage spent his last days.
5. Schlegel - - -	Father, Jean Adolphe: preacher of repute ; also writer of poems.
6. Sévigné, Marquise de	Son, Marquis de Sévigné: a man of much ability and courage, who ended a restless and somewhat dis- sipated life in the practice of devo- tion, under the direction of ecclesi- astics. He had not sufficient per- severance to succeed in anything.

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I doubt if these relatives can fairly be termed "eminent."

We next find amongst these relatives a large number who have in some measure distinguished themselves, chiefly in literature and travel.

These instances are too many to be set out at length, but I think a consideration of them will scarcely show these relatives to have achieved eminence. It must be remembered what a very large class men of literature are, and the same is true in some measure of physicians and travellers, members of Parliament, and professors in colleges or even Universities. But if in this I be held to have been guilty of exaggeration, I think it will be admitted that the relatives of men of literature relied on by Mr. Galton are men comparatively of lower achievement than those of Judges. And that is sufficient for my purpose.

But when we consider the relations of men of literature in gross, we shall find that not only natural ability, but environments, have had very great effect on achievement.

Bear in mind that amongst the relatives of the Judges we might make a long list of Bishops and Archbishops, Admirals and Generals (p. 69).

But the relations of men of literature?

On p. 170 Mr. Galton gives a "summary of relationships of fifty-two literary persons grouped in thirty-three families."

He first gives the names of twelve persons of literature who had one relation (or two in the family).

Amongst the relations set out there is only one

Bishop—a nephew of Bossuet. Bossuet, though Mr. Galton does not state the fact, was himself a Bishop ; and if his environments of birth and his personal influence from personal position be considered, I think we must hold that environment had part, as well as possible natural ability, in gaining a bishopric for his nephew.

Amongst the relations set out or referred to there is only one Judge—the great-great-grandfather of Maria Edgeworth.

Amongst these relations there is not one General, Admiral, Archbishop, or statesman.

He then gives the names of fourteen persons of literature with two or three relations (or three or four in the family).

Amongst these relations there is one General—the brother of Bentham.

There is one diplomatist, a relative of Fénelon, Ambassador to England in the time of Elizabeth.

There is one Cardinal—Cardinal Richelieu, the great-uncle of Gramont.

There is one Proconsul—the brother of Seneca.

Amongst all these relations there is not one Bishop, Archbishop, or Admiral.

But when we consider this General, Ambassador, Cardinal, and perhaps Proconsul, we find that environment was always favourable for achievement. Inheritance of natural ability is not alone an explanation of success.

If Bentham's father had not been a man of wealth, Samuel Bentham could not have so started in life as to become a General.

If Fénelon's relative had not been born of high

social rank—he was a Marquis—he could not have been Ambassador in England.

As to Richelieu, he was a son of the Lord of Richelieu, and, supreme as was his natural ability, his environments of birth were, at the least, of such a character as to leave free scope for achievement.

The Proconsul I do not refer to, as I can find no material to work on.

Mr. Galton next gives a list of thirteen persons of literature who had four or more relations (or five or more in the family).

Amongst these relatives there are two Judges—a maternal grandfather and a first-cousin on the mother's side of Fielding.

There is one statesman—the father of Madame de Staël.

Sir Philip Sydney stands alone; he had many relatives of achievement.

Amongst these relatives there is not one Bishop, Archbishop, or Admiral.

But when we consider these relatives of achievement, again we find how certain it is that achievement by any man in literature does not alone enable his relatives, however able, to achieve in certain directions.

I am unable to trace Fielding's ancestors in the female line; but, as his maternal grandfather and his first cousin by his mother's blood were Judges, and as he and his half-brother were magistrates, I affirm with no doubt that his family had social standing, and so social influence. I say these environments were conditions precedent for the

natural ability of his relatives to have had any chance of achievement as they did achieve.

I do not deny the natural ability of Colin Macaulay, the General ; but he must have had the environment of comparative wealth to gain the first step which led to ultimate achievement.

And as to Macaulay himself, I cannot resist giving the following excerpt from the “Encyclopædia Britannica,” especially as Mr. Galton relies on natural ability to some extent as displayed in the House of Lords :

“ In the following year (1857) he (Macaulay) was raised to the peerage by the title of Baron Macaulay of Rothley. . . . It was a novelty in English life to see eminence which was neither that of territorial opulence nor of political or military services recognised and rewarded by elevation to the peerage.”

Jacques Necker, the father of Madame de Staël, unquestionably owed his rise in life to the possession of natural ability ; but it is impossible to study his life without perceiving how largely the environment of marriage influenced his career in advance. It might almost without exaggeration be said that his wife’s ambition had as large a part in his success as his own genius.

Sir Philip Sydney and his relations must be treated separately ; his family was one of rank, with sufficient wealth to support the rank.

When we consider that only reasonable continence in mind and body is required by descendants to retain rank and wealth acquired by an ancestor ; the great ease with which those of rank and wealth can climb to high positions in politics and diplomacy,

or even in the physical defence of their country ; the very small amount of natural ability required for fulfilling, without serious disgrace, the duties incumbent on high position in the political or diplomatic world ; the overwhelming economic influence which rank and wealth still possess in the British Isles, I think it must be admitted that the environments of wealth and rank are exceptionally favourable for achievement in certain directions.

Consider the genealogical tree of Sir Philip Sydney. I affirm that if the particular achievements of *all* his relations be looked into it will be found that there was not one single channel of achievement in which any relation of, for example, a Bunyan, however gifted with natural ability, could have gained success. Every one of these channels was closed to all who had not the environments of rank and wealth to support rank. Such a man as Bunyan could never have been even “a patron of letters.” If the blacksmith had been a patriot, he could never have been honoured by having his head cut off.

The reason why Sir Philip Sydney shows more relatives of eminence than any one of the other men of literature he is classed with is because of the favourable environments of his family in rank, wealth, and social influence.

And Sir Philip Sydney himself ? A most admirable man. But was he “eminent” in scholarship with reference to Mr. Galton’s standard of eminence ?

Bear in mind, however, that it is not now my purpose to deny the natural ability of Sydney himself or of his relations. All I have to show is that the environments of rank and comparative

wealth were conditions precedent to achievement so far as his relatives are concerned.

From what is above set out, I submit that the following conclusions follow :

The men of eminence who have achieved in literature are at any time a far larger class than any other class of men marked as eminent. In spite of this, they have always a smaller number of relatives who have achieved than any other class, unless, perhaps, those eminent in art and science.

This result must be referred to environment, for if only natural ability were in question, the largest class would have the largest number of eminent or distinguished relations.

## CHAPTER VI

### STATESMEN

I DEAL now with statesmen, for, incidentally to men of literature, I have already dealt with Judges.

As to statesmen, Mr. Galton (p. 104) says :

“ I propose in this chapter to discuss the relationship of modern English statesmen. It is my earnest desire, throughout this book, to steer safely between two dangers—on the one hand of accepting mere official position or notoriety as identical with a more discriminative reputation, and, on the other, of an unconscious bias towards facts most favourable to my argument. . . . Again, the exceptional position of a Cabinet Minister cannot possibly be a just criterion of a correspondingly exceptional share of natural gifts, because statesmanship is not an open profession . . . but, as a rule, to which there are very few exceptions, statesmen consist of men who had obtained, it little matters how, the privilege of entering Parliament in early life, and of being kept there. Every Cabinet is necessarily selected from a limited field. No doubt it always contains some few persons of very high natural gifts, who would have found their way to the front under any

reasonably fair political régime, but it also invariably contains others who would have fallen far behind in the struggle for place and influence if all England had been admitted on equal terms to the struggle."

These words of Mr. Galton are sufficient for my purpose. They show very clearly that only a very small minority of the inhabitants of the British Isles compete on equal terms for achievement as statesmen. The very great majority of these inhabitants are barred from the race.

In other words, environment, not natural ability, determines the small class who compete, and environment has some influence, apart from natural ability, in determining who shall achieve.

A Gladstone or Disraeli may achieve, but with even such men two facts are to be marked :

1. Any such man can only succeed after long struggle and opposition, which are not deterring forces for the man starting with exceptionally favourable environments of rank and social influence. Rank and social power fought against Gladstone throughout his life ; Disraeli had to "nibble" both.

2. Any such man must start with *some* property.

Not one single man without property has ever achieved as a statesman. Even a Gambetta or Abraham Lincoln had some property. And it must, too, be remembered that in France and the United States rank and social power have not the same relative favourable influence on possible success in statesmanship as with us.

## LIST OF STATESMEN.

When we consider this list of statesmen we shall find overwhelming proof of how the environments of rank, comparative wealth, and social influence, and not natural ability alone, determine achievement. A comparison with the list of men of literature is almost conclusive.

Mr. Galton takes as material for his list of statesmen (1) the twenty-five Premiers of England, except Addington, beginning with the reign of George III. ; (2) Lord Brougham's "Statesmen" of the reign of George III. ; (3) a small supplementary list taken from various periods and other countries.

I think I am justified in saying that this list of statesmen represents a class distinguished above all other classes, except that of the commanders relied on by Mr. Galton, for its favourable environments of rank, wealth, and social influence.

I think I am justified in saying that the list of men of literature represents, with the exceptions I have pointed out, a class distinguished above all other classes of eminent men for its unfavourable environments of rank, wealth, and social influence.

Do both lists represent men of eminence in natural ability ? Mr. Galton says they do.

Does natural ability show itself in achievement in differing channels ? Mr. Galton says it does.

How, then, does Mr. Galton explain the fact that nearly all the relations of nearly all these statesmen achieved by distinction in the public services ?

How does he explain the fact that very few of the relations of the men of literature achieved by any

such distinction ? And how does he explain the fact that the few who did thus achieve were relations of men who were not only marked in literature, but men of rank or social influence or comparative wealth ?

Consider a few of these statesmen—Disraeli, Francis, Horner, Sheridan, and Wilberforce.

Does the reader suspect why I have picked these men out ? I have picked them out because they are the few of the statesmen not remarkable for favourable environments of rank, social interest, and wealth, though they are men of equal natural ability with the other statesmen.

What must we expect as to their relations ? I say we must expect to find that they have not achieved through the public service. They have not.

So far as statesmen are concerned, it is quite clear that competition is confined to a very small class of the community, and that achievement, even in this small class, is determined in part by environment.

## CHAPTER VII

### ENGLISH PEERAGES

**M**R. GALTON gives no list of eminent peers on which he depends for proof of hereditary genius.

And, at first sight, when we consider the origin of most peerages, this reserve on his part may appear to be politic. But is it quite scientific?

To make his list of men of literature he has (p. 167) "described those who had decidedly eminent relatives."

Now, English peers have, as to the great majority, environments of rank, comparative wealth, and social influence. Therefore I feel sure that I could make a list of them, at least as long as that of men of literature, showing a far larger number of eminent relations than the men of literature show.

More than this. I feel sure I could make a list showing a far larger number of relations of peers who have achieved in the public services than any list of the relations of men of literature. By Mr. Galton's argument this should show that the average peer is of greater natural ability than the average man of literature.

But the question, again, is one of environment, not natural ability.

So far as I can follow Mr. Galton he does not rely on peers at all, as a general class, as exhibiting hereditary genius. He only touches "their influence on the race," and in this connection he refers simply to the aristocratic unselfishness they exhibit in their constant practice of marrying heiresses; the periodic sacrifices of natural affection that they offer for the continuance of wealth to support their family rank. Their motives for this (p. 132) may be "intelligible enough, and not to be condemned," but, for my present purpose, these motives are beside the question.

When we reflect that very, very few men of art, science, or literature have founded families, and that very, very few have been raised to the peerage, we may find it difficult to agree with Mr. Galton (p. 140) that "the most highly-gifted men are ennobled." But if the most highly-gifted men are ennobled, surely from this class Mr. Galton should find the clearest proof of hereditary genius? It is no answer to say that he has dealt with the class under the heads of Judges, statesmen, etc. The class dealt with *generally* should be taken to prove his case.

But, I repeat, the class dealt with generally does show numerous relations who have achieved; they have achieved, however, because of their environments of rank, wealth, and social influence. Natural ability there may be, but in nearly every case it would never have resulted in achievement but for the favourable environments. Or can it be possible that Mr. Galton, quite honestly, has refused to deal with peers as a class, because as a class they show no average exceptional ability, and yet do show a large number of relatives who have achieved?

## CHAPTER VIII

### COMMANDERS

ALL the commanders in Mr. Galton's list are undoubtedly men of exceptional natural ability ; but, unquestionably, in every case success was conditioned largely by environment. No few were born as rulers, which infers that they were born to high command, so that their success depended on the chance coincidence of natural ability and favourable environments ; others were born to rank ; all were born with property and some social standing. Bear in mind that I am referring to the men in Mr. Galton's list. I am not referring to such men as Lord Kitchener or Lord Roberts.

But Mr. Galton agrees that competition for achievement as commanders is almost exclusively confined to a small class (p. 143).

And when we consider the relations of these men, we find, as with statesmen, exactly what we should expect to find. They are remarkable for achievement in those channels which rank, wealth, and personal social influence open to them, and to them alone.

Take one remarkable instance—Napoleon Buonaparte.

Would any one of his relations, however great his natural ability, have achieved, as so many did achieve, if Buonaparte himself had not attained so high a position in rank, wealth, and influence ?

I have gone honestly through the names of all these relations ; I find a few — very few — whose achievements must be referred to natural ability (given the environments of property). But for the great majority I affirm that, if the material position and power of the “ eminent ” man be given, the lines of his relations’ achievements can be at once determined.

In this connection I must refer to the following statement of Mr. Galton (p. 47) :

“ As regards commanders, the qualities that raise a man to a peerage may be of a peculiar kind, such as would not have raised him to eminence in ordinary times. Strategy is as much a speciality as chess-playing, and large practice is required to develop it. It is difficult to see how strategical gifts, combined with a hardy constitution, dashing courage, and a restless disposition, can achieve eminence in times of peace. These qualities are more likely to attract a man to the hunting-field, if he have enough money ; or, if not, to make him an unsuccessful speculator. It consequently happens that Generals of high, but not the very highest, order, such as Napoleon’s Marshals and Cromwell’s Generals, are rarely found to have eminent kins-folk.”

Now, whatever the above passage may mean, it would appear to admit the great influence environments of peace or war, and practice or want of

practice in strategy, must have on achievement as a commander ; it admits the influence of environments.

But, referring to the last paragraph, is it not a fact that Buonaparte's Marshals and Cromwell's Generals were by birth *not* distinguished in rank, wealth, and social influence ? Is it not this fact which distinguishes them so sharply from other commanders ? Does this not account for their want of eminent kinsfolk in achievement ? I hold very confidently that it does, and that Mr. Galton's explanation is wide of the mark.

We can here draw a comparison very much in point.

Buonaparte's Marshals were certainly remarkable for ability. I am not sure what any Englishman would say, but a Frenchman or possibly a German would say that no commander either before or after Buonaparte has ever had under him so large a number of eminent Generals.

But, however this may be, I think all will agree that Buonaparte's Generals were at least equal in ability to those of Wellington.

Now compare the relations of Buonaparte's Generals with those of Wellington. I think we shall find very few of the former distinguished in achievement ; I think we shall find very many of the latter distinguished in achievement.

Why is this ?

I submit it can only be because Wellington's Generals had more favourable environments of rank, wealth, and social influence.

Again, Mr. Galton says (p. 148) :

" The commanders are more able than the states-

men, and the statesmen than the Judges. Consequently, comparing the three groups together, we find the abler men to have, on the average, the larger number of able kinsmen. Similarly, the proportion borne by those commanders who have any eminent relations at all to those who have not is much greater than it is in statesmen, and in these much greater than in Judges."

I admit these proportions of relations ; I rely on them for argument. But as to the comparison of ability I differ altogether.

Heretofore I have confined myself mainly to facts and to deductions from facts. Now I must argue, and therefore I am bound to admit that there is antecedent probability that Mr. Galton, who has studied his subject deeply, is more likely to be right than I, who but criticise material provided by another. But I think I can make a strong case.

The following statements are probably correct :

(1) A sufficient power of command to lead to eminence in troublous times is much less unusual than is commonly supposed, and it lies neglected in the course of ordinary life. This Mr. Galton admits (see p. 48). (2) With the one exception of the French army under Buonaparte the competition for achievement as commander takes place between a very small, very restricted class. (3) For success as a commander there must ordinarily be the environments of "troublous" times, while practice in strategy from youth constitutes a favourable environment.

All this shows not only that there is no general human competition for achievement as commander, but that environment is a most important factor in

determining whether the possibility of achievement shall be open or not.

The statement contained in the above paragraph, though to a less degree, is true of statesmen, and, though to a still less degree, it is true of Judges.

But with men of art, science, and literature, competition is approximately open to all, not to a small restricted class ; and though environments of rank, wealth, and social influence are not without some effect, they have unquestionably less effect on achievement herein than they have on achievement as commanders, statesmen, or Judges.

Again, the men of art, science, and literature, though by far the largest of the four classes, are marked generally by unfavourable environments of rank, wealth, and social influence, while the three classes of commanders, statesmen, and Judges are marked by favourable environments. I think, too, a scrutiny of Mr. Galton's three lists will show that the commanders he refers to and relies on in his list have the most favourable, the statesmen slightly the less favourable, and the Judges still the less favourable of these environments.

If environments and not natural ability mainly determine achievement, what should we find ?

We should find that the commanders relied on by Mr. Galton had the greatest number, statesmen a lower number, and Judges a still lower number of relatives eminent in achievement. We do find this.

And we should find the fourth class, though by far the largest, with comparatively few relatives eminent in achievement. We do find this.

More than this, we should find the direction of the

achievement of these relatives determined by rank, wealth, and social influence. We should find the finest public plums picked (for achievement) by the commanders' relations, the next finest by the statesmen's relations, and so, next, as to the Judges' relations. And we should find the relations of men of art, science, and literature achieving eminence by comparatively mean success in artistic or other intellectual accomplishment.

And this, again, we do find.

Mr. Galton in great measure admits these facts, but he explains them, as I have before stated, by affirming that "the commanders are more able than the statesmen, and the statesmen more able than the Judges."

Now I deny the truth of this.

I affirm that the highest and most free field for the exercise of natural ability is in art, science, and literature ; that the field of law is a more restricted field for such exercise ; that the fields of war and politics are still more restricted (see, too, p. 340 of Mr. Galton's work).

This statement may appear beside the question. It is not, for Mr. Galton does not deal at all with natural ability; he deals only with achievement (reputation) as a measure of natural ability. It follows, then, that where we find the widest field for the exercise of natural ability, there we ought to find the truest measure by achievement of natural ability.

Other things being equal, we ought unquestionably to find the highest development in the achievements of natural ability in those fields which are the highest and most free for the exercise of natural

ability, and wherein the greatest number compete ; and so we ought to find such highest development in the fields of art, science, and literature.

The only reply to this is that other things are *not* equal—that is, that though the persons competing as commanders, statesmen, and Judges form a restricted class (so that the principle of the “survival of the fittest” cannot be applied for the population generally), and though their fields for competition are also restricted, still, these restricted fields give room for higher exercise of natural ability than do the unrestricted fields of art, science, and literature.

Let us consider this objection.

I admit at the outset that in popular opinion a Duke of Wellington will rank before a Gladstone, and a Gladstone before a Pasteur ; but popular opinion is determined largely by externals of rank, wealth, and social influence, and I cannot help suspecting that Mr. Galton has himself been unconsciously influenced in some slight measure by this very general materialistic belief. I cannot accept this public opinion as scientifically well based. I think that if we consider achievement (reputation) as a measure of natural ability we must leave out altogether the chance environments of rank, wealth, and social influence.

And if we do leave out of consideration these environments, can we accept Mr. Galton’s three degrees of comparative ability for commanders, statesmen, and Judges ?

What field for the display of ability has the commander ? Not the whole world, material and spiritual, but chance isolated spots of battle. What time has he for this display ? Not all time, but

chance, isolated times of physical strife between nation and nation. And what are the mental qualities necessary for success as a commander ? Power to order and command his army that it may defeat another army in physical strife.

I cannot think that the highest form of evolved natural ability is displayed in achievement on the battlefield ; and there is no large class, no continuity of time and opportunity for the action of natural selection in evolving a class with this particular form of natural ability, so that there appears to be no material for evolution to work on.

All this is true in slightly lower degree of statesmen. Their class and their field for action are restricted. A strong physical constitution, a facile tongue, power to attract men, and a mind diplomatic in the handling of truth will go far, with the environments of rank, wealth, and social influence, to make a great statesman.

But though the field of action for statesmen is as material as that of commanders, they have to deal more generally with men and affairs, so I would submit they require more highly evolved powers of intellect.

What I have written above is, as I have said, merely argument, or perhaps the bare expression of personal opinion. With Judges this objection appear more strongly.

But I think the natural ability required for a great Judge is higher in kind than that required for a great commander or statesman. Judges have to deal with all sorts and conditions of men and material ; almost all possible perplexities of circumstance and all possible emotions and mental attitudes of mankind

come before them for unravelment and adjudication. I cannot help thinking, for instance, that the demand on and exercise of natural ability required from the Judges to decide the arbitration between Great Britain and the United States after the Civil War were greater than those imposed on General Grant to win battles in physical strife.

As to the natural ability of men of art, science, and literature compared to that of commanders, statesmen, and Judges, I can argue nothing ; the question would appear to turn solely on personal opinion.

But I would ask the reader this. Compare four classes :

1. Alexander, Buonaparte, and Wellington.
2. Pitt, Gladstone, and Disraeli.
3. Lord Eldon, Lord Herschell, and Sir George Jessel.
4. Michelangelo, Sir Isaac Newton, and Shakspere.

Now, put out of mind all question of the environments of rank, wealth, and social influence. Then how do you compare these classes in natural ability ?

I submit that the highest natural ability is shown in the fourth, the last class, and so in gradation down to the first.

Dealing with the first, second, and third classes, Mr. Galton shows that the first have more eminent relations than the second, and the second than the third. He holds that this results from comparative ability. He holds that (p. 148) "the commanders are more able than the statesmen, and the statesmen more able than the Judges." The men of art, science, and literature he would appear to leave out of the running.

I argue that the Judges are more able than the statesmen, and the statesmen more able than the commanders, and I would place the men of art, science, and literature an easy first.

Further, I allege that the commanders set out in Mr. Galton's list have more favourable environments of rank, wealth, and social influence than the statesmen, and the statesmen more such favourable environments than the Judges. And from these facts of comparative environment I deduce directly the comparative numbers of eminent relations. In this I admit, with Mr. Galton, that men of art, science, and literature are out of the running.

The whole matter, however, largely depends on personal opinion. We must all of us be in great doubt as to what we really mean by natural ability.

And here I must note one fact not without importance.

While admitting that inherited natural ability shows itself in various channels of achievement, Mr. Galton says (p. 49) of commanders :

“ Their peculiar type of ability is largely transmitted.”

And he would appear to hold that this is true in great measure of statesmen and Judges.

He gives examples of this, and others can be found in his book where the descendants of commanders, statesmen, and Judges have followed in their fathers' footsteps.

I have already suggested that natural selection has not sufficient material to deal with in order to evolve types of commanders, statesmen, and Judges. And not one single instance does Mr. Galton give—not one instance, I think, can be found—of a son

following in his father's footsteps where the environments were unfavourable. In other words, all the instances are of descendants born into environments favourable for success in the same line of achievement in which their ancestors were successful. This being so, I hold that it is quite impossible to prove that the son who achieves in his father's footsteps has so achieved from sheer natural ability. There is, indeed, a very strong probability that, but for his father's environments, environments into which the son is born, there would have been no such successful achievement at all by the son.

If, however, we turn to the fields of achievement in art, science, and literature, we find an entirely different state of things. Herein, as has been shown, environments of rank, wealth, and social influence have not the same influence on achievement, and if we find inherited ability showing itself in the son in the same channel as it was shown in the father, we cannot deny that this likeness in effort may have resulted from inheritance of natural ability, though the environments of the father's reputation and home influence must have had great effect.

We find, then, that only a very small and restricted class are free to compete for achievement as commanders, and that, even for this small class, successful achievement is conditioned quite as largely by environment as by natural ability.

So the natural ability of commanders—and also of statesmen and Judges—measured by successful achievement, cannot in any way be taken as a measure of the natural ability of the whole population, the overwhelming majority of whom are barred from competition.

## CHAPTER IX

### MEN OF SCIENCE

AS I have treated art, science, and literature as the three largest and most free fields for the exercise of natural ability, nearly all I have said as to men of literature applies to men of science.

So, without going largely into detail, I am now in a position to predicate certain facts as to men of science.

Holding as I do that achievement is conditioned by environments of rank, wealth, and social influence, and that men of science have not, generally, favourable environments of rank, wealth, and social influence, certain deductions should directly follow when we consider men of science.

1. We should find very few of their relations distinguished as commanders, statesmen, diplomatists, noblemen, or, indeed, in any walk of life where environments of rank, wealth, and social influence are conditions precedent for achievement.

We do find this.

2. In every case where we find the relations of men of science distinguished as commanders, statesmen, etc., we should expect to find that the men of science in question had environments of rank, wealth, and social interest.

We do find this in every case but one, which is doubtful.

I give below the only instances I can find in Mr. Galton's list, of men of science who had relatives distinguished as commanders, statesmen, etc. In every instance but the one which is doubtful the man of science had himself environments of rank, wealth, or social influence.

1. Francis Bacon. His father was Sir Nicholas Bacon, Lord Keeper of the Great Seal.

2. The Hon. Robert Boyle. His father was the first Earl of Cork.

3. Sir Benjamin Brodie. His first-cousin was Lord Denman, the Lord Chief Justice. This case forms a partial exception, but only a partial exception, for though success in law is largely conditioned by environment, *anyone* can put his foot on the first step of the ladder without environments of rank or social influence, and with but comparatively little wealth.

4. The Hon. Henry Cavendish. His father was the brother of the Duke of Devonshire.

5. D'Alembert. His mother was a woman of position, and all his relations who are referred to by Mr. Galton as eminent were on the mother's side.

6. John Napier. His father was Master of the Mint of Scotland.

7. Oersted. I cannot trace this family.

In every other instance given, where the environments of rank, wealth, or social influence were wanting, we find failure in such forms of achievement when we consider relatives.

But even supreme achievements of genius in

science are not free from the effect of environment.

One of the greatest and best of all the men that have ever lived was Charles Darwin, and not for one moment do I deny inherited ability in descent from him.

But consider the life of Darwin himself.

If he had been born in environments obliging him to labour for his daily bread, could he have had time and opportunity to develop his great theory? Bear in mind the vast amount of work and of time that was necessary for the many minute observations of nature he entered on—work and time immediately unrewarding so far as money was concerned. If he had been born one of the labouring millions, should we now know of and accept the theory of the survival of the fittest?

As to the relatives of men of science, Mr. Galton himself (p. 197) says :

“ It is, I believe, owing to the favourable conditions of their early training that an unusually large proportion of the sons of the most gifted men of science become distinguished in the same career.”

## CHAPTER X

### POETS

**M**R. GALTON (p. 225) states :

“The poets and artists generally are men of high aspirations, but, for all that, they are a sensuous, erotic race, exceedingly irregular in their way of life.”

I should myself have preferred to say that the poetic faculty is generally assumed to be the highest known to human nature, and that the “irregularity” of the lives of poets has arisen in great part from their contempt for rank, wealth, and social influence. I think such men form a class so peculiarly subject to the natural influence of personal ability that they live almost free from the restrictions and prejudices of human environments.

If this be so, and if, as I hereafter try to prove, exceptional ability revealed in any individual results almost wholly from the approximately chance consensus in him of certain of the numberless and varying characteristics of mind which are very generally distributed throughout humanity, what should we find ?

We should find poets *by birth* belonging to no distinct class of society ; we should find that they rise

apparently casually, almost as probably from one class as another. We do find this. As they more or less ignore rank, wealth, and social influence, we should find not only that they never found families, but that they have, as a rule, no relations distinguished as commanders, statesmen, etc. We do find this. An instance like that of Tennyson but makes an exception to prove the rule.

If we consider (I take these names from Mr. Galton) Camoens, Spenser, Beranger, Burns, Calderon, Campbell, Goldoni, Ben Jonson, Keats, Metastasio, Tom Moore, Pope, Schiller, and Shakspere, we find this to be so. These men go to prove that poets arise more generally from all ranks of society than does any other class of distinguished men ; that they are marked in *want* of relatives who have achieved as commanders, statesmen, etc. ; and that they never found families.

Now, not one of the poets I have referred to appears in Mr. Galton's list ; they are only referred to by him in passing argument. But if we consider his list we find very much the same thing.

The one exception is, or rather should be, Lord Byron. By his environments of birth we should expect to find he had relatives who had distinguished themselves as commanders or statesmen or— But he had no such relatives. Why was this ? The environments of poverty account for it. And the environments of poverty account for the direction of achievement in which his genius declared itself.

“ The poverty into which Byron was born, and from which his accession to high rank did not relieve

him, had much to do in determining his future career. That he would have written verses in whatever circumstances he had been born we may safely believe ; but if he had been born in affluence we may be certain that, with his impressionable disposition, he would never have been the poet of the revolution, the most powerful exponent of the modern spirit.”—“Encyclopædia Britannica,” vol. iv., p. 605.

Here we have a very strong example of the influence of environments, not only on achievement as touching relatives of the man generally, but even on the direction of achievement in which genius displays itself.

## CHAPTER XI

### MUSICIANS AND PAINTERS

WHAT I have written is true, though perhaps in some lower degree, for musicians and painters, so I do not deal with them in detail. When we consider Mr. Galton's list we find that the men he refers to were very generally wanting in rank, wealth, or social influence. Their relatives, therefore, had no free scope for the play of their natural ability. None of them are shown to be distinguished as, for instance, commanders or statesmen.

## CHAPTER XII

### DIVINES

**D**IVICES it is unnecessary to deal with, and for the following reasons : all the divines on whom Mr. Galton relies for exemplification of his theory will be found to be men of more or less property ; not one is an associate of thieves and prostitutes, or a man, by the sweat of his brow, earning his daily bread. They are all honourable men, doing admirable work in the world ; but they are all men of some rank in society and of some property. They would appear, therefore, to have no personal connection with poverty.

Again, what is required in the leading examples of our religion are men of pure hearts rather than of powerful heads. It would therefore be a libel on our divines to say they mark a class of exceptional mental ability ; they mark, rather, the men picked from the race for simplicity of life, humbleness of spirit, and altruistic love of humanity in general. If, by mistaken choice, some few achieve the highest rank as divines simply because of their mental abilities, this must not lead us to vilify the majority as having attained their unique success by

such indirect paths. They would appear, therefore, not to mark a class from which hereditary mental genius can be traced.

Lastly, I think religion far too sacred a subject to be dealt with in a more or less scientific or unscientific treatise.

## CHAPTER XIII

### SENIOR CLASSICS OF CAMBRIDGE

**B**EFORE I consider this class of distinguished men I must refer to what Mr. Galton says as to Senior Wranglers, for his words would appear to support very strongly my argument that achievement (reputation) is no trustworthy measure for natural ability. I may here, perhaps, suggest that the boy who is a "prize boy" certainly shows exceptional natural ability. He so frequently fails to turn out a "prize man" from the restrictive influences of his after-life, or perhaps from the absence of personal ambition, that barbarous instinct which, as humanity advances morally and intellectually, must weaken.

He states (p. 197) :

"As regards mathematicians, when we consider how many among them have been possessed of enormous natural gifts, it might have been expected that the lists of their eminent kinsmen would have been yet richer than they are. . . . I account for the rarity of such relationship in the following manner : a man given to abstract ideas is not likely to succeed in the world unless he be particularly eminent in his peculiar line of intellectual effort.

If the more moderately gifted relative of a great mathematician can discover laws, well and good ; but if he spends his days in puzzling over problems too insignificant to be of practical or theoretical import, or else too hard for him to solve, or if he simply reads what other people have written, he makes no way at all, and leaves no name behind him.”

Mr. Galton herein implicitly admits that there are a large number of men of natural ability whom he neglects because they have not achieved. And is his reason for this failure to achieve good ? I submit not. If Senior Wranglers are considered as a class, it will be found they were not born with favourable environments of rank, wealth, and social influence. This is the true reason for the non-achievement of their relatives.

When we consider the list of Senior Classics chosen by Mr. Galton, this fact of environment conditioning achievement appears very clearly.

Out of thirty-six Senior Classics, all bracketed cases being excluded, fourteen only find a place in Mr. Galton’s appendix, so twenty-two are not referred to. But as to these twenty-two, of whom I know nothing, I feel justified in asserting that, on examination, not one would be found to have relatives distinguished as commanders, statesmen, or possibly Judges, who was not born with, or had attained to, environments of rank, wealth, or social influence.

Of the fourteen, only one—Edward H. Bunbury—had relatives distinguished as statesmen. This gentleman was the grandson of the first Lord Holland.

Edmund Lushington had a brother who was Secretary to the Government in India and an uncle a Privy Councillor. This gentleman was the grandson of a Bishop and great-nephew of the first Lord Ellenborough.

Generally, it may be stated that not one Senior Classic born without environments of rank, wealth, or social influence had any relatives so distinguished. Bear in mind that I do not deny the ability of Senior Classics or the probability that their relatives within a generation or two also had exceptional ability. I am dealing but with achievement as a measure of ability.

## CHAPTER XIV

### OARSMEN AND WRESTLERS

WITH these classes I do not deal, as my argument is only concerned with the inheritance of natural ability.

The question of inheritance of muscular strength sufficient to pull long pieces of wood through water with exceptional success in speed, or sufficient to enable any particular man to "down" a majority of his fellows, has nothing to do with the question of the approximately chance inheritance in any individual of a particular consensus of those particular complexities of mental powers which constitute natural ability.

## CHAPTER XV

### DEMAGOGUES

**M**R. GALTON (p. 48) writes of demagogues :

“ Those who rise to the surface and play a prominent part in the transactions of a troubled period must have courage and force of character, but they need not have high intellectual powers. Nay, it is more appropriate that the intellects of such men should be narrow and one-sided and their dispositions moody and embittered. These are not qualities that lead to eminence in ordinary times. Consequently, the families of such men are mostly unknown to fame. But the kinsmen of popular leaders of the highest order, as of the two Gracchi, of the two Arteveldes, and of Mirabeau, are illustrious.”

In stating what is above set out, Mr. Galton would appear to entertain only the question of high intellectual powers and to neglect questions of inheritance of moral qualities. If so, he must use the word “demagogue” in its inclusive sense—the man good and the man evil, in intent. I do not, then, see why it is more appropriate that the intellects of such men should be narrow and one-sided and their dispositions moody and embittered. Possibly

even a Robespierre or Danton was influenced by as high ideals as a Buonaparte, Richelieu, or Machiavelli.

But even if it be appropriate that the man who labours, rightly or wrongly, for the welfare of the masses should have a narrow and one-sided intellect, it is still possible that he who in troublous times forces his way upwards and takes command, shows at least the same intellectual power as the commander.

If the man who, in spite of unfavourable environments and by force of his own unassisted personality, can rise to rule and direct an undisciplined crowd must be held to display no high intellectual power, it is difficult to understand how the commander, who gains his position largely by the chance of favourable environments, can be said to display such power in ruling and directing a body of men already disciplined to obedience.

If the question were one simply of the inheritance of natural ability, I submit that we should find the great leaders of the people with at least as many eminent relations as commanders or statesmen. But we do not find this. And why?

Because the demagogue who works, morally or immorally, for the masses, not for himself, has thereby made rank, wealth, and social influence his deadly enemies, and because of the swamping effect of poverty on achievement. An overwhelming majority of demagogues have been born in the environments of poverty, and none of these have been founders of families.

Of course, there are a few exceptions. The two

Gracchi, two Arteveldes, and Mirabeau had, as Mr. Galton points out, kinsmen who were illustrious. But why was this ? Because the Gracchi were members of a widespread noble family of Rome ; because the elder Artevelde had enormous wealth, and the social influence flowing from wealth ; because Mirabeau was one of a titled and influential family.

Of all demagogues it may be said generally : state the relative environments of rank, wealth, and social influence of each and all ; then these environments will probably in all cases determine whether there are or are not relations eminent in achievement.

## CHAPTER XVI

### INCIDENTAL SUMMARY

In what has gone before I have dealt with achievement (reputation) as a measure of natural ability, and have tried to show from Mr. Galton's own statements that it is not a true measure for the race when the swamping effect of poverty is fairly considered.

The classes of Judges, statesmen, and commanders are restricted always in number, and this number at any time has no relation to the number of existing men who by natural ability are capable of achievement in such walks of life ; it is fixed solely with reference to the economic requirements of the race.

I argue that at any time when a Judge, statesman, or commander has to be appointed there are always a comparatively large number of men in existence capable of fulfilling the required duties ; but, *ex hypothesi*, only one man can be appointed. This one man, then, becomes marked against his fellows who are, on the average, equal to him in natural ability, as a centre of wealth, rank, and social influence. It is because of these favourable environments that the man so appointed has

eminent relatives. If any one of his fellows—superior, equal, or inferior in actual ability—had chanced on these favourable environments, he also would have been marked against his fellows as a centre for eminent relations.

In this connection I would appeal, as Mr. Galton more than once does, to the experience of the reader. Can anyone state honestly that it is an invariable rule for the most able men to be appointed as Judges? An Eldon or Jessel may stand unquestioned; but is it not fact that political and social environments have ordinarily such influence that sheer ability is very seldom the one and only test of appointment?

Again, can anyone state honestly that it is an invariable rule for the most able men to be chosen to make up a Cabinet? Is it not true that the man of eminent ability is suspected and ordinarily passed over for the safe, moderate man?

Even with commanders, has there ever been a period when there has been free and open competition amongst officers for succession to high command by the force of sheer natural ability? The point I make is that, in these three walks of life, only small classes of the race can compete for success, and that success (achievement) depends not on the possession of natural ability alone, but also on the possession of wealth, rank, and social influence. Therefore, successful achievement in these walks of life cannot be taken as any measure of natural ability for the people at large.

In art, science, and literature, again, we have seen that achievement is also largely conditioned

by environments, though not to the same extent. And, too, the number of men who have achieved in these walks of life is comparatively very large, far larger than the restricted class Mr. Galton deals with would lead us to suppose.

Here, again, we find how far more generally is natural ability distributed than Mr. Galton would lead us to suppose.

Mr. Galton (p. 45) says :

"Even if a man be long unconscious of his powers, an opportunity is sure to occur—they occur over and over again to every man—that will discover them. He will then soon make up for past arrears, and outstrip competitors with many years' start in the race of life."

By opportunity Mr. Galton means chance of successful achievement (reputation).

There is some measure of truth in this statement ; but if analyzed it will be found to conflict with Mr. Galton's theory.

It may be granted at once that every man has more than one chance of raising himself above his fellows ; but we have not all the same fellows. The Duke's fellows are by no means the same as those of the daily labourer. The chances of every man vary with his varying social and economic environments. There are 1,000,000 people in this country whose aggregate income is double the aggregate income of the remaining 26,000,000. The result is that the 26,000,000 are entirely wanting in the environments of rank, wealth, and social influence. And these environments are not only nearly always favourable for

achievement, but are almost a necessity for achievement in certain directions. It follows that the many have a very, very poor chance of achievement (reputation) ; it is the few with property who are free to compete for the highest prizes.

The present economic state of the world is such that the overwhelming majority of mankind is bound down to soulless, almost hopeless labour ; whatever the natural ability of any person may be, the chances are that he is born one of the majority—that is, born with very, very poor chances of so developing his mental powers that he can achieve in any way. Some few, in spite of adverse environment, do force their way to achievement ; but for achievement they must first command some degree of property.

“Chill penury repressed their noble rage,  
And froze the genial current of the soul.”

Poverty, by its swamping effect, bars the action of by far the greater part of the natural ability of our race. There is no want of natural ability ; the want is of freedom to achieve.

Successful achievement, taken as a measure of natural ability, touches but the natural ability of small classes ; the mental powers of the overwhelming majority are wholly neglected.

## CHAPTER XVII

### THE LAW OF DEVIATION FROM AN AVERAGE

**A**S I fully accept this law as stated by Mr. Galton, but, too, as I draw from it conclusions in conflict with those he has arrived at, it is necessary first to show what it is he alleges that he has proved, taking achievement (reputation) as his measure of natural ability.

He states (p. 60) with reference to Judges :

“Another fact to be observed is the nearness of the relationships in my list. The single letters (these single letters show eminent relations only as to father or son) are far more the most common. Also, though a man has twice as many grandfathers as fathers, and probably more than twice as many grandsons as sons, yet the Judges are found more frequently to have eminent fathers than grandfathers, and eminent sons than grandsons. In the third degree of relationship the eminent kinsmen are yet more rare, although the number of individuals in these degrees is increased in a duplicate proportion. When a Judge has no more than one eminent relation, that relation is nearly always to be found in the first or second degree.”

A reference to Mr. Galton’s lists of men eminent

in other walks of life will show this to be generally true.

Again, on p. 351, he states :

" We know how careless Nature is of the lives of individuals ; we have seen how careless she is of eminent families—how they are built up, flourish, and decay."

It is clear, then, that Mr. Galton does not allege that his measure of achievement shows the inheritance of natural ability generally for particular classes or families. He but assumes to show that exceptional natural ability reveals itself in achievement in different families at different times, culminates in the second or third generation, reveals itself in decreasing power in the next two or three generations, and then disappears for the particular families.

Again, he gives no law, suggests no reason for this revelation of exceptional natural ability in any particular family. I say that no such law or reason can be found.

As before shown, strong evidence can be adduced in support of the contention that these passing waves of exceptional ability are as likely to arise, and do in fact arise, from any one class of society as from any other, whatever the environments of rank, wealth, and social influence. I am not sure that Mr. Galton would deny this, and I believe Professor Karl Pearson has statistical evidence going to show that the so-called upper classes are constantly recruited from the masses. When we take achievement (reputation) as a measure of natural ability, I admit we find certain classes exceptionally dis-

tinguished ; but this, I have already tried to show, arises from the favourable influence on achievement of environments of rank, wealth, and social influence.

I now turn to a consideration of the law of deviation from an average, which must be treated with reference to what Mr. Galton assumes to have proved.

What the law is may be sufficiently shown by one example.

Consider 1,000,000 men of a single race inhabiting an island. Let 66 inches be their average height ; then a large majority will be found to be of heights about 66 inches. Those of greater height will be fewer and fewer as their height increases, till only 100 will be found with heights greater than 78 inches. The same will be found true for those with decreasing heights, till only 100 will be found with heights below 54 inches.

This law of deviation we may take as true for height alone, and generally we may take it as true for any *one* physical distinction of men.

But suppose for these same 1,000,000 men we take, not one, but many measurements ? Chest measurements, size of head, relative sizes of body and limbs, relative length of neck, of hand, of foot, etc. Suppose we take ninety-nine other measurements ?

Then, if we take the sum of these measurements, we shall find by *the same law of deviation* that the number of the central, large, average measurement will be decreased, and the numbers above and below will be increased. For instance, those above and below, who were before 100, will now be approximately  $100 \times 100$ , or 10,000. I use the word

"approximately," because there may be some loose relation between each of these measurements.

Thus, taking the sum of all these measurements, the difference between these 1,000,000 men will not be nearly so marked as it was when we took one measurement; the 1,000,000 will all stand on a nearer likeness one to another. And bear in mind we are not herein taking any arbitrary measure for physical distinctions ; we are dealing with the physical distinctions themselves.

Let us now consider natural ability with reference to this same law of deviation.

## CHAPTER XVIII

### NATURAL ABILITY CONSIDERED IN RELATION TO THE LAW OF DEVIATION FROM AN AVERAGE

**I**N the first place, inherited natural ability *is* inherited natural ability. The education or development of natural ability, the opportunity for reputation attained by natural ability, the environments generally encouraging or discouraging the revelation in action of natural ability, have nothing at all to do with the inheritance generally of natural ability.

And there is one important fact of natural ability which, I think, has perhaps never been accounted for, never dealt with scientifically. It is this : the full power of every man's natural ability is commonly never called forth in action ; every man's brain is probably capable of doing more than it is ever called upon to do. At any given time in the history of man the brain capacity is greater than the demands made on it. At every upward stage in man's evolution he always has brain capacity which largely remains dormant in action because his environments are unfavourable.

To take an analogy that I have used elsewhere—it is not the same as Plato's—we may compare man's

brain to a fiddle of Stradivarius. I write "a fiddle of Stradivarius" in order to confine our ideas to an instrument of one kind. This fiddle can only be used to express the music in existence, but it contains power to express music not in existence, assuming the existence of a possible player. Should a greater than Beethoven, Mozart, or Wagner arise in the future, we know this fiddle has dormant capacity to express his higher ideal achievements when properly played on.

Or, to take a more concrete example, no one will deny that the vast majority of our population, born to soulless labour for existence, live with the powers of their natural ability dormant from the influence of unfavourable environments. No one will deny that a gutter-snipe taken from the mother's breast, well fed, well educated at Eton and Oxford, and given favourable social environments, would grow to be a man more full of ideas, and therefore possessing more material for putting ideas in action or expressing them with the pen, than if he had throughout remained in the environments of the gutter.

A remarkable proof of how great is the reserve of brain power in every race, of how largely the *achievements* of any race are conditioned by environment, is shown by Japan.

The average brain power of the Japanese must be approximately the same that it was fifty or one hundred years ago. Whence, then, comes the sudden outburst of the present day in achievement?

It comes from the better and more free use of pre-existing brain-power. The brain-power (natural

ability) is the same ; it is the use of this power which by new environments has been enlarged.

At no time are the possibilities of man's brain exhausted in achievement. Under evolution the brain capacity of the average individual is always in advance of the practical demands made on it.

But what is natural ability ? Is it *one* thing ? I say it is not ; I affirm it to be "a fellow of infinite variety." And with this Mr. Galton would appear to agree (p. 363).

Even in the same walk of life we cannot compare any two men as equal. We cannot equate Buonaparte with Wellington, Bismarck with Gladstone, Milton with Shelley, Goethe with Molière, Newton with Adams. Speaking generally, we find that at any given time there are not even *two* of the living 1,500,000,000 with the same natural ability ; all of this vast multitude vary in natural ability one from the other. And, remembering always that we are considering the inheritance of actual ability, is natural ability always patent in inheritance ?

Mr. Galton tells us (p. 220) of Newton himself that his ancestry appear to have been in no way remarkable for intellectual ability.

Was, then, Newton a miracle ? I deny the miraculous in genius ; it is nothing more than a very exceptional deviation from the average. I affirm the truth to be that Newton was revealed as a man of genius because he inherited his powers from his ancestors, his genius resulting from the particular consensus in him of inherited powers from his ancestors, which powers were patent in

him in action, powers of mind which *were* in them, but not so apportioned in degree or relation as to result in effective genius under the environments in which they lived. It is not natural ability itself, it is the infinite complexities of mind which are the subject of inheritance.

Consider the future for one moment by the light of past experience ; then we know that in the next hundred years men eminent in art, science, and literature, men eminent even as commanders and statesmen and Judges, will appear. Leave out of consideration the favourable environments of rank, wealth, and social influence. Can we predicate from what families, what classes of humanity, such men will arise ? We cannot.

But surely this would not be so were natural ability one thing ? Surely our failure in power to prophesy arises because the particular powers of mind which go to make genius in the individual are so infinite in themselves, so indiscriminately distributed amongst humanity at large, that the problem is too hard for us ?

To some degree Mr. Galton agrees with this (p. 367).

I would here suggest, without fear of being venturesomely original, a definition of natural ability.

The intellect of each and every man is made up of almost infinite complexities ; it consists in each case of a particular consensus in the particular individual of almost infinitely varying, possibly differing, inherited complex powers. It is the particular consensus in any individual which constitutes his natural ability, patent or latent.

For every individual of any race these almost infinitely varying, possibly differing, powers are very generally inherited from generation to generation, and by Darwin's theory we can understand how, as time progresses, there can be evolution, if very slow and over long periods, in intellect. But, very clearly, the particular consensus of these powers in any particular individual cannot be the subject of stable inheritance. Absolutely the same consensus in an individual of a second generation is impossible.

In what is written above there is nothing in conflict with Darwin's provisional theory of pangenesis, though there is conflict with Mr. Galton's extension and particularization of that theory.

We may perhaps use the analogy of dealing out cards : then for each successive generation there is a fresh dealing out of the cards ; each individual gets a newly-dealt hand. And the complexity involved will be understood when we remember how many have cards dealt them, and how many cards are dealt to each. Again, we may be sure that no man ever plays his cards to the best advantage, and herein we see by analogy how the brain-power of each is always in advance of its revelation in action.

But this analogy must not be carried too far, for if the cards are always dealt separately, we fail to account for what I think Mr. Galton proves—hereditary eminence for a passing time of a few generations. This suggests that the new cards are sometimes dealt not singly, but in groups from the pack. Still, I make the point that we know little or nothing of the law determining this grouping, and that if

this fresh dealing in groups does take place, the newly-dealt group is never exactly the same as any group previously dealt.

But we do know that the average intellect of different races of men is not the same ; each race "plays with" its own particular "evolved" pack of cards. And, assuming the grouping of cards, though this grouping to us comes from chance, the same might be true for a particular class of men of a particular race, though true in a lower degree. It might be true for a particular family of a particular class, though true in a still lower degree. But, if true for any such class or family, it could only be true for a short and passing time. This Mr. Galton implicitly admits to be the case as the world exists, though he suggests that by "domestic breeding" such classes or families could be fixed.

Mr. Galton (p. 340) gives as one reason for the brilliant intellect of the ancient Greek race the fact that the population was small—was what might, perhaps, be termed merely a large family ; but if he be right in this, it is also fact that the smallness of the breeding population explains why the population was marked by achievement for only a comparatively short time. A large population, variously related to environments (varying within limits) over long periods, is necessary for the continuance of evolution in the rise of the average intellect. Civilized races evolve from large continents, not small islands. In small islands particular faculties may be more highly and particularly evolved in specialization than is the case in large continents ; but natural ability is built up of infinite complexities, and can-

not evolve continuously where natural selection has but few specialized forms to act on. Power in the organism to advance is always ahead of its power revealed in action, in achievement ; for advance of this power, revealed in action, there must be continuous "play with" environments varying within limits. Even the evolved organism man, which can in some measure determine its own environments, must, for advance, make these environments vary, though it may still steady them. In this way the whole army of natural ability advances, while the stragglers behind and the most venturesome in front are cut off. But if the venturesome have descendants their exceptional ability may survive to leaven and raise the average natural ability of the whole army.

So, though we can never find for the individual in two generations the same consensus of mental powers, we may find some likeness in consensus. Still, this likeness must be passing, cannot hold for more than a very few generations. The form of the face or body is a simple thing in itself, and may be the subject of direct inheritance ; but particular natural ability is built up of such infinite complexities that it cannot ordinarily be the subject of direct inheritance.

If, then, natural ability does consist of these almost infinite complexities of brain-power—and it is these complexities, not natural ability itself, which are the subject of inheritance—we must apply the law of deviation from an average, not to natural ability considered as one thing, but to these complexities considered as very many things. And if,

as I contend—and as, perhaps, Mr. Galton admits—these complexities are very generally distributed amongst mankind, we shall find, by the law of deviation that the chance of exceptional natural ability appearing by inheritance from any individual is more nearly equal for each individual of the race than Mr. Galton suggests.

Mr. Galton takes natural ability as one thing; his law of deviation for natural ability follows directly.

But if we take natural ability as made up of many things, we find the individuals of any race to be on a far more equal level as to natural ability, latent or patent, and the possibility of showing patent exceptional natural ability in descent far more equally distributed amongst them than he suggests. We must hold, too, that the average natural ability, patent or latent, of any race is far higher than it is assumed by Mr. Galton to be.

## CHAPTER XIX

### WHAT HAS MR. GALTON PROVED ?

AT the present time we have many differing breeds of horses, all probably descended from one and the same type. The cart-horse has been evolved to draw heavy weights, the racehorse to gallop swiftly. Both breed true ; both show distinct cases of heredity.

But the inheritance of natural ability ?

Assume that we have a flock of 1,000,000 sheep which, on the average, breed true. But suppose, most unscientifically, that at any given time there are always 250 which breed with differently-formed ears. Assume that, for two generations before and two after, these 250 show, in their relatives, ears somewhat like the 250 ; and assume the 250 arise casually amongst the 1,000,000, so that at any given time it is impossible to say which sheep of the 1,000,000 will show in their progeny the peculiar ears.

Then what should we say as to inheritance amongst these 1,000,000 ?

That, so far as inheritance goes, they are of one type, but with a latent power in all of breeding for a short passing time another type, a latent power which becomes patent at any time only in 250.

We have inheritance in general with, for short passing times, particular phases of inheritance.

Now, this is very closely what Mr. Galton has proved of the inheritance of natural ability, taking achievement as its measure. And he has proved nothing more.

Following him, we will take 1,000,000 to represent our population, and assume that 250 of these are eminent men.

During the next hundred years 250 of this 1,000,000 will be eminent men. If we leave out of consideration environments of rank, wealth, and social influence, it is impossible to say which individuals of this 1,000,000 will breed the 250 eminent men. There must, then, be so far as we now know, latent power, on the average, in all of this 1,000,000 to breed eminent men, for Mr. Galton admits, as to every one of the distinguished men he deals with, that he can only find related exceptional ability for two generations before and two generations after the distinguished man. What does this mean ? It means that each particular wave of natural ability rose from the level of the average ability of the 1,000,000 and sank back to the same level. If each wave rises from that level, if Mr. Galton cannot predicate from what particular part of that level it will rise, then the whole race, so far as we can determine, inherits the possibilities of that level, and the whole race inherits the power to rise in particular waves.

Again, Mr. Galton does not allege any relation between these chance outbursts of natural ability ; all he shows is that his distinguished men have within one or two, or possibly three, generations

eminent relations. Take all the men of marked genius in the world. For no two can blood-relationship be found. Mr. Galton (p. 3) says, indeed, of the 400 men of extraordinary genius that he refers to : “A considerable proportion of them will be found to be interrelated.” I cannot myself find any case of such inter-relation. I can but find, as I have before stated, unrelated waves of a few generations rising from, and sinking back to, the general level. But if I am wrong in this, it will not, I think, affect the general argument.

This proves, again, that men of genius are not a distinct class in blood or heredity.

Now let us admit that Mr. Galton has proved (p. 6) that men who are more or less illustrious have eminent kinsfolk, always remembering that, as a rule, he confines his use of the word “kinsfolk” to the second or third generation from the illustrious man. What have we ?

We have no proof of the inheritance generally of exceptional natural ability ; we have but a distinct proof of general inheritance in each average man of more or less the same complexities of intellect—complexities of intellect which may reveal themselves in any individual in a particular consensus making for patent exceptional natural ability. The particular inheritance depends on the general inheritance.

These illustrious men are not related by heredity one to another ; at any given time, neglecting environments of rank, wealth, and social influence, it is impossible to predicate from what individuals they will be “bred.” It is only for a few generations that they are distinguished in natural ability from

the average level of ability. Whence did their illustrious ability rise ? From the general level. Where does it fall to ? The general level. Surely, then, this exceptional natural ability is directly related to the race's general level of ability ? Because the exceptional ability survives for a few generations it cannot be said it is stable, a thing in itself. And if this exceptional ability is inherited from average ability, this average ability must have latent power to develop such exceptional ability.

Particular natural ability in an individual is, then, not one thing. It must result, so far as we now know, from a particular approximately chance consensus in the individual of complexities of intellect generally inherited in the race ; it results from the particular "cards" dealt to the individual. With our present knowledge we only say that chance deals the cards.

That a Shakspere, Milton, Newton, Bunyan, De Foe, Faraday, or Watt inherits his transcendent powers of mind from his ancestors is true ; but until some law or reason for the particular revelation of patent ability is known we can only refer it to a chance wave from the general level of ability.

It follows, then, that there is a direct relation between illustrious and eminent men and the general average level of ability. The higher this level the higher the ability of the distinguished few. But the number of such men, as revealed in achievement, will not largely increase, for the number of men distinguished by achievement is in great measure, as before shown, determined by environments, not by natural ability.

That this relation exists Mr. Galton admits, for he says (p. 343) : "If we could raise the average standard of our race only one grade, what vast changes would be produced !" And how could the raising of the average standard of the race tend to the production of men higher in genius (and, as Mr. Galton, I think, holds, a larger number of such men) unless such men inherit their genius from powers of mind very generally distributed amongst the many ?

## CHAPTER XX

### THE COMPARATIVE WORTH OF DIFFERENT RACES

**M**R. GALTON, in dealing with this subject (p. 336), appears not only to admit, but to rely on the fact that this relation between the mental ability of "eminent" and "illustrious" men, on the one hand, and the average mental ability of the race, on the other hand, does exist. And, as this relation, if a fact, has a most important bearing not only on the possibility of domestic breeding of eminent and illustrious men, but also on the question of any necessity for raising the average grade of the intellect of the race, it is necessary to examine somewhat closely what he writes as to the comparative worth of different races.

He states (p. 337) :

"I shall assume that the *intervals* between the grades of ability are the *same* in all the races—that is, if the ability of Class A of one race be equal to the ability of Class C in another, then the ability of Class B of the former shall be supposed equal to that of Class D of the latter, and so on."

This cannot, as Mr. Galton himself says, be strictly true, but for the sake of argument and simplicity may be taken as true.

He then proceeds to compare the average intellect of certain races one with another. He assumes to show, for example, that the negro race is two grades lower than the Anglo-Saxon race (p. 338). But how does he show this?

By a comparison of men eminent or illustrious in achievement amongst the negro race with men eminent or illustrious in achievement amongst the Anglo-Saxon race. He writes (p. 338) :

“First, the negro race has occasionally, but very rarely, produced such men as Toussaint l’Ouverture, who are of our Class F—that is to say, its X, or its total classes above G, appear to correspond with our F, showing a difference of not less than two grades between the black and white races, and it may be more.”

I think I am not wronging Mr. Galton in stating that what he assumes to prove is : Compare, as a class, the eminent and illustrious men of any race with the eminent and illustrious men of any other race. This gives us two classes for comparison. Then, by a comparison of the natural ability of these two classes, we can determine the average grade of ability of the two races. If the former class of eminent and illustrious men is higher in grade of ability than the latter class, then the former race has a higher average grade of ability than the latter.

But if this be true, then the converse must also be true. And the converse is this : if the former race be of a higher average grade of ability than the latter, then a class of eminent and illustrious men picked from the former race will be of higher ability

than a like class of eminent and illustrious men picked from the latter.

This would prove conclusively that there is a *direct relation* between the average ability of a race and the average ability of its eminent and illustrious men.

It follows that one of two statements must be true. The one statement is : the mental grade of the eminent and illustrious men of any race determines the average mental grade of the whole race. The other statement is : the average mental grade of the whole race determines the mental grade of the eminent and illustrious men of the race.

If these statements be compared, I contend that the latter must be true.

But though such proof is sufficient for my purpose, I must demur to the wide distinctions Mr. Galton makes between the average abilities of differing races. The distinctions I admit, but I hold that they are comparatively slight, for we have no measure to our hand of natural ability itself. This Mr. Galton himself admits. And when he relies on achievement as a measure of natural ability, he introduces the very great influence of environment. Buonaparte himself, with the environments of Toussaint l'Ouverture, could have probably achieved no more than the negro did.

And Japan ?

Mr. Galton's work on hereditary genius was written in 1869. If he had then "graded" the average ability of the Japanese against any European race, would their graded positions be the same as if he graded them now ? And has the Japanese nation made a jump in natural ability since 1869 ? No ;

it is simply that its environments have changed, so that it can play the *same cards* it had before to better effect in achievement.

Throughout humanity we find that brain-power is ordinarily capable of doing more than environments oblige or allow it to do. There is always a reserve of force which, as with Japan, may with changed and more favourable environments burst forth into sudden action, achievement.

Here, again, we see how achievement fails as a full measure of natural ability.

In treating of the comparative worth of different races Mr. Galton bases certain arguments on his consideration of the ancient Greek race, which he terms the ablest on record.

He says (p. 340) :

“The ablest race of whom history bears record is unquestionably the ancient Greek, partly because their masterpieces in the principal departments of intellectual activity are still unsurpassed and in many respects unequalled, and partly because the population that gave birth to the creators of those masterpieces was very small.”

In the first place, it must be noted that Mr. Galton here alleges the pre-eminence of the Greeks in intellect, because “their masterpieces in the principal departments of intellectual activity are still unsurpassed and in many respects unequalled.”

The measure for pre-eminence in intellect that he here takes I admit to be sound ; but in taking this measure there is conflict with what he has previously written, for he has previously shown that the commanders in his list have more eminent relations than

statesmen, and statesmen more eminent relations than Judges. I think it has also been shown that when we consider how comparatively large is the class of men of art, science, and literature, we find this class has far fewer eminent relations than even Judges.

And Mr. Galton accounts for the above facts thus. He states (p. 148) :

“The commanders are more able than the statesmen, and the statesmen than the Judges. Consequently, comparing the three groups together, we find the abler men to have, on the average, the larger number of able kinsmen.”

By parity of reasoning he places the class of men of art, science, and literature lowest of all in ability.

Now, however, when considering the ancient Greeks, he would appear to place such men not lowest, but highest in ability. Personally, I agree with him in doing this.

But let us consider what he means by terming the ancient Greek the ablest race known to history. He clearly means that this race had generally an exceptionally high level of ability, for on p. 341 he shows that in achievement its average of eminent and illustrious men as against all the members of the race was approximately the same as the average we now find for our own race. Herein he admits the relation between the ability of eminent and illustrious men and the average ability of the race. But he determines the average ability of the ancient Greek race as higher than that of any other historic race solely by the measure of the achievements of its eminent and illustrious men.

Now, how did this race start with its exceptionally high average of ability ? This high average of ability was not the result of the exceptional achievements of its eminent and illustrious men ; the exceptional achievements of these eminent and illustrious men were, if we follow Mr. Galton, conditioned by, they resulted from, the exceptionally high level of ability of the race. How did the race start with this high level ? Whence did it inherit this high level ?

I argue that the exceptional achievements of the ancient Greeks were the result of exceptional environment rather than of exceptional natural ability.

This race had what every race has—a great reserve of natural ability ordinarily not used, but capable of being revealed in action when the environments are favourable. And the environments of the ancient Greek race were exceptionally favourable for the exercise of natural ability in those directions in which that race stands pre-eminent.

In support of my contention many facts of history can be adduced.

The history of nearly all European nations for the last thousand years is the history of events which have more or less steadily developed and evolved under the force of the gradual rise in the average of, not so much, the natural ability as the educated natural ability of the people at large.

If it be true that there is a relation between the grade of the average natural ability of any race and the grade of exceptional ability of the illustrious and eminent men of the race, it follows directly that it is not the men of exceptional ability who raise a race

in civilization, for the very existence of such men depends on the average grade of natural ability of the race. Bear in mind, too, that I lay no great stress on evolution in natural ability ; it is the gradual rise in educated natural ability I rely on. I introduce the factor of environment.

This rise in educated natural ability has shown itself mainly in the gradual emancipation of the people from economic subjection. I hold very strongly that, until some race has conquered the material—that is, until the human environments of the race are of such a nature as to leave every individual with time and opportunity for the use and cultivation of his intellect—there can be no great rise in the average natural ability of the race, especially as revealed in achievement.

If, however, we turn to the intellectual achievement of this thousand years, we find times of great output and times of comparative stagnation. Consider, for example, the Elizabethan period. It was exceptionally marked by supreme achievements of natural ability in numberless directions.

But surely no one will contend for a moment that during the reign of Elizabeth there was a general rise in the average inherited natural ability of the race ? I have the strongest reasons to believe that no one of that time had taken the previous generation in hand, so that by judicious selection in marriage and kindly annihilation of the unfit an exceptional race of subjects had been produced for the virgin Queen.

If, then, the supreme achievements of that century cannot be referred to any rise in the average natural

ability of the race, they must be referred solely to environment.

The environments of that time were, in fact, peculiarly favourable for achievement. This has been animadverted on so frequently by so many eminent, if not illustrious, men that it is unnecessary to give chapter and verse.

It is quite impossible to allege that during this time of one thousand years there have been certain periods when the average natural ability of the people has been low, certain periods when it has been high. It must have been, approximately, always the same or subject to gradual change in evolution or devolution. But the achievements of natural ability have been high and have been low ; these achievements, however, have been conditioned by favourable and unfavourable environments. And the comparative numbers of illustrious, even eminent, men as revealed in achievement have varied at different periods. This variation, also, has probably resulted from favourable or unfavourable environments. But, too, we must remember that the exceptional natural ability of such men results from the approximately chance consensus in them of certain mental complexities. And what we term "chance" always works irregularly. In other words, we cannot reduce it to agreement with any known law.

Immigration into England at certain periods may have raised, or lowered, the average natural abilities of the race ; the accursed persecutions of scoundrels vilifying the name of Christ may have tended to lower the average natural ability of the race ; the

restrictions on freedom of thought and action deliberately placed on humanity by well-meaning but blind ministers of religions may have tended to hamper the achievements of natural ability. These, however, are but incidents. The general law still holds good that the natural ability of man has always a reserve of force ordinarily not called into action, so that periodic outbursts of exceptional mental achievement in a race are not the result of periodic raising of the average of natural ability, but of exceptionally favourable environments.

These arguments apply closely to the ancient Greek race, though it need not be denied that they had a good average of natural ability to start with, in spite of the fact that we cannot determine whence they inherited this good average.

Again, we have the fact that the period of time during which this race was remarkable for exceptional achievement was, historically, very short. This also would appear to point to environment as almost a determining factor in achievement.

But while Mr. Galton does not show how the race started with the high average of natural ability he alleges for it, he does assume to show how the average intellect degraded. He refers (p. 342) the decline of "this marvellously gifted race" to the increasing laxity of social morality—the avoidance of marriage as unfashionable, and general dissoluteness of manners. All this, he affirms, led to loss of the purity of the race.

There is great doubt whether immorality and dissoluteness have ever led to the degradation of a race. It would appear that these evils never taint

a race generally ; they taint but a class or classes of the race.

No one has ever yet attempted to record the social history of any race. All recorded history is the history of the few, written by the few, for the perusal of the few. The life of those few of a race who hold property is held to be the life of the race itself. History deals with the number and heights of the waves, never with the general level and character of the ocean of life. It assumes that the number and heights of the waves determine the level of the ocean. I hold that the contrary is true.

Thus we are taught that in the reign of Charles II. our race was immoral and dissolute. The fall of ancient Rome is referred to the decaying taint of such evils. But at both periods this immorality and dissoluteness did not directly affect the race ; it only so affected small and restricted classes.

The class that immorality and dissoluteness affect directly would appear to be always the same—the small class marked by wealth and so inherited power. And this class has always been the governing class. So, when this class is tainted by such evils, *the State may be affected ; it may even fall*, though the race itself is not degraded. When a State is so seriously affected, still more when it falls, the environments of the race undergo a more or less sudden change. Under the State the environments for mental achievement may have been favourable, and, on its fall, these environments may have become unfavourable. There can be sudden change in the environments of a race ; there cannot be sudden change in the average ability of a race.

It would appear, therefore, that when the achievements of a race fall with the fall of a State, this failure in achievement must be referred not to the mental degradation of the race, but to the change of environment resulting on the fall of the State.

If this be so, then it was the constitution of the State that made the favourable environments for mental achievement of the ancient Greek race ; it was the fall of the State, from the immorality and dissoluteness of *a class*, that made the unfavourable environments for mental achievement of the ancient Greek race. We must refer Greek achievement at one period, and non-achievement at an after-period, not to comparatively sudden change in the ability of the race, but to comparatively sudden change in the environments of the race.

It may be stated generally on this subject of the comparative worth of different races that for any race there is always a reserve of mental capacity or force which is incapable of revealed action because of restrictive environments.

The average level of natural ability of any race evolves slowly over long periods.

There is always a fixed relation between the average level of natural ability of a race and the exceptional natural ability of its eminent and illustrious men.

So exceptional achievement over any limited period by the marked men of a race must be referred to exceptionally favourable environments existing during such period, not to any sudden outburst of exceptional ability in the race as a whole or in its eminent and illustrious men as individuals.

## CHAPTER XXI

### MR. GALTON'S REMEDIES

M R. GALTON, after a full examination and exemplification of his theory of hereditary genius, shows very clearly that serious evils exist in society as constituted, and, assuming his theory to be correct, he propounds certain remedies.

He alleges that the world—or at the lowest Great Britain and Ireland—suffers from a general failure of human intellect to perform adequately the demands made on it by modern civilization. In this I agree with him. I would even go so far as to allege that this failure in achievement is a scandal to common-sense.

And, as I have stated, he suggests certain remedies.

In criticising these proposed remedies, I must make a very large assumption : I must assume the reader has read carefully all I have written. Without such an assumption it would be necessary to enter on interminable repetition.

I propose to show that Mr. Galton's remedies are not only impossible, but inadvisable. I try also to suggest dimly what the true remedy is, or might be.

Mr. Galton (p. 345) says :

“ We are in crying want for a greater fund of

ability in all stations of life, for neither the classes of statesmen, philosophers, artisans, nor labourers, are up to the modern complexity of their several professions. An extended civilization like ours comprises more interests than the ordinary statesmen or philosophers of our present race are capable of dealing with, and it exacts more intelligent work than our ordinary artisans and labourers are capable of performing. Our race is overweighted, and appears likely to be drudged into degeneracy by demands that exceed its powers."

Now, Mr. Galton (p. 343), I think, assumes throughout his work that the salvation of a race depends on its eminent, if not illustrious, men. The larger the number of this class the better the state and the greater the probability of the advance in civilization of the race.

The first remedy he shadows forth (p. 1) for our present evils appears from his statement that "it would be quite practicable to produce a highly-gifted race of men by judicious marriages during several consecutive generations."

This remedy must be dealt with tenderly, as I am not altogether sure that he proposes it quite seriously. But I would point out the objections.

In the first place, the world has never known any race which has undertaken the domestic breeding of eminent and illustrious men. Family succession in intellect over long periods is unknown; family succession to power in the State, resulting from family succession to rank and wealth, is known; but such cases are clearly governed by favourable environments.

So how could a commencement in such breeding be entered on? We have no past experience to help us. We might, perhaps, breed a tall or strong race of men; but we are so sheerly ignorant of what complexities of intellect in the male and what complexities of intellect in the female are required for the probability of patent natural ability in the offspring that there is the strongest probability the ingredients we might choose for our mixture would fail to give the result we seek. Experience would appear to show that natural ability is as likely to be latent as patent in the individual. So in "blotting out" what appeared to us the weakest we might be blotting out the strongest. Of all the illustrious men that Mr. Galton refers to and that he—quite rightly—has picked out for his purpose there is not one whose ancestry can be explained as necessarily producing an illustrious man. I admit that every illustrious man is a direct result of his ancestry, but I deny that the result can be definitely traced back as necessarily following from its known origin. Darwin, in the "Origin of Species," p. 10, says: "The laws governing inheritance are, for the most part, unknown." Mendl's theory supports my argument.

For instance, consider any illustrious man—Buonaparte, Newton, Shakspere, or Milton. I not only assert the present impossibility of evolving such men by domestic breeding, but I assert that if during the time of any one of them domestic breeders had existed, they would never have dreamt of "pairing off" the particular father and mother who, in fact, originated the particular illustrious

man. Not only would domestic breeding have failed to produce such men, but there is the strongest probability that it would have prevented their coming into existence.

Again, if this class of eminent or illustrious man were ever brought into being and "fixed" as a class by domestic breeding, it would at once destroy the relation which now exists between the average grade of intellect of the race, on the one hand, and the exceptional grade of intellect of eminent and illustrious men on the other hand. What does this mean? It means a relative lowering of the average grade of intellect of the race; it means that for the benefit of a small class the many would be made to suffer. If we pick from the pack the best cards for the "play" of a chosen few, the many must "play" with cards of inferior value.

The argument that "swamping" has effect against the survival of the fittest is, I think, false. The survival of the fittest cannot have effect in evolution without constant "swamping." Natural selection cares nothing for the individual, nothing even for the family; it is the race it cherishes, and the bigger the race in numbers the greater not only its fostering affection, but its favourable results.

If for any race its best intellect could be constantly withdrawn for the benefit of a small class, not only would the majority of the race stagnate in intellect, natural selection having constantly lowered material to deal with, but the picked class itself would ultimately fail; it would specialize in narrow grooves of intellect.

And for what purposes in the State does Mr. Galton want this picked class? Evidently for government, and perhaps exceptional achievements in art, science, and literature. Would government by such an exclusive hereditary class be possible over long periods?

I think the question but requires to be stated blankly to be answered blankly in the negative.

Further, if the tie between the general average of natural ability of the many and the exceptional natural ability of these few were broken, there would not only be poorer material left for natural selection to act on for the mental evolution of the race, but if natural selection acting on the many should raise amongst them men of exceptional natural ability, that of itself would upset the government of the domestic breed.

But the remedy on which Mr. Galton lays greatest stress is to raise the average standard of intellect of the race. He says (pp. 343, 344):

“If we could raise the average standard of our race only one grade, what vast changes would be produced! It seems to me most essential to the well-being of future generations that the average standard of ability of the present time should be raised.”

Mr. Galton relies herein on the raising of the average standard of ability itself, not of educated ability, for education is a question wholly of environment. He relies on the precedent raising of the standard of natural ability for the after-improvement of the environments of the race. I admit that the raising of this standard would lead

to change of environment, but I doubt greatly if this change would be of an advisable character.

Imagine for one moment what would be the effect of raising the standard of ability of that vast majority of our people who work for their daily bread at the will of the few with property. Imagine the average working man with his ability raised to the standard—shall I write?—of Macnamara, Lloyd George, John Burns, or Crookes. In such case would the present economic state of the country be suffered to continue?

I am writing quite seriously, and ask the reader to consider the question seriously.

It is an undoubted fact that never at any moment is there a failure of supply of meat and drink, houses and clothing, sufficient for the reasonable needs of every man, woman, and child in Great Britain and Ireland. It is an undoubted fact that at any moment there are always honest men and women who cannot find work for existence.

If the average standard of ability of the people were raised, as I suggest, would this economic state be allowed to continue?

I argue that it would not; there would be a revolution, bloody or bloodless. We could not imagine 39,000,000 of Macnamaras, Lloyd Georges, John Burns, and Crookes quietly suffering the present economic environments of the many to exist if they themselves constituted, as they would constitute, the overwhelming majority.

Consider the march of events during the last hundred years with the standard of British intellect as it in fact is.

The people have advanced far on the road to economic enfranchisement. And what has caused this advance ? The pressure of the average standard of ability of the people. But how has this pressure increased to obtain this betterment ? Not from the raising of the standard of ability, but, under the influence of environment, from the raising of the *educated* standard of ability.

I think that if we inquire in cold blood, we shall find that during this hundred years there has not been one eminent or even illustrious man who has originated a single measure for the economic advance of the people. It is true that all such measures have been associated with the names of more or less marked men, but this follows directly from a necessity of the present position. Public measures must be "passed" by the Government ; for such passing they must be presented by some individual of the small ruling class, and so the measure itself necessarily becomes associated in the public view with particular individuals of the small ruling class.

If, however, we examine into the preliminary history of all those great measures which have been passed for the economic benefit of the people, we shall find in every case that these measures have been forced on the Government by the crying needs or demands of the people at large. Every measure has been preceded by more or less public demand for *more than* the measure has given. It is this demand which has really originated the measure ; the man or men passing it but act as conduit pipes or safety-valves.

On the other hand, it is not alleged for a moment

that such measures could have been passed had there not been the particular men to pass them. Pressure in a boiler—even dangerous pressure—by no means implies the necessary existence of the safety-valve. All I contend for is that the eminent or illustrious man—the safety-valve—cannot act unless there is the public pressure behind him.

Without labouring the point, I will say simply that if any of the changes made during the last hundred years for the amelioration of the economic condition of the people at large be considered, it will be found that public pressure for change always preceded the changes effected by particular men. Never has any eminent or illustrious man originated any such change; all were in the air before such a man took action. It might even be argued that not only do eminent and illustrious men never originate measures for the people's advance, but that they show their power mainly in inducing the people to be content with less than they demand. All measures of government are based on compromise.

However this may be, it is fact that the people during this hundred years have, with their existing standard of ability, advanced greatly in economic enfranchisement. Still greater advance is in the air. So long as the public conscience moves the race towards higher general education, more equitable distribution of labour and property, and generally more reasonable freedom and time for intellectual achievement—so long, I think, no complaint is to be made of the general standard of ability; the race itself is evolving, as it has in the

past evolved from the "primordial atom." The average standard of ability of the race is probably advancing, if advancing very slowly, with the average improvement in environments. The average standard of *educated* ability is certainly so advancing.

If, then, we find that with our existing standard of ability the people have been advancing in economic enfranchisement, what would be the result of a sudden raising of their standard of ability?

It would necessarily be accompanied by as sudden a subjective change in environment. The result would be an economic revolution.

I doubt greatly that revolution of any kind ever inures to the stable advance of mankind.

Every race, at every period, contains in number and ability such eminent and illustrious men as are necessary for the good, not of these marked men themselves, but of the race.

The law of natural selection is inexorable; it confines itself so strictly to the slow evolution of humanity at large, from simple primordial life to some future and glorious complexity, that it not only blots out the feeble, but the abnormally strong, whether strong in physical or mental power. This blotting out of the abnormally powerful in intellect is a fact, is an absolute necessity for the advance of the many. Plato, Bacon, and numberless moderns have pointed out that for great reputation (achievement) amongst his fellows, the man must have in him something of the fool. We, the many, who suffer the command of greatness, suffer it but when made more or less in our own likeness. And this, though it has swamping effect on the supreme

achievement of the supreme few, is absolutely necessary for the advancing evolution of the average natural ability of the race.

The law of deviation from the average proves what is above written, if it may be applied to the complexities of the human intellect. Take any race of the average height of 5 feet 6 inches. Withdraw constantly, generation after generation, those above the average height from the breed of the race ; then the average height of the race will fall. Withdraw those below the average height, and the average height will probably increase. But when we deal with the complexities of the human intellect we find we cannot distinguish the strong from the weak, so that we cannot of ourselves withdraw the weak or strong.

The blotting out of families as families of exceptional ability is bad perhaps for the family, but it is good for the race. It is this swamping effect which gives natural selection full material to act on. The good "intellectual" blood of these families mixes with the blood of the people, and leavens and raises the general average natural ability, if to a very small degree.

## CHAPTER XXII

### SUMMING UP

M R. GALTON sets out to prove that genius is hereditary. By the measure he takes of reputation (achievement) I think he only partially succeeds in what he has attempted.

Assuming for the sake of argument that his facts are correct, he proves that when we consider any illustrious man we find that in some cases for two or three generations before and two or three generations after the man in case there are eminent relations. But whence does the exceptional ability of these few generations originate? It is a passing wave rising from and falling back to the average level of the ability of the race. So these few generations of exceptional men inherit their exceptional powers from the general average ability of the race, and the after-descendants sink back to this general average of ability. Mr. Galton himself (p. 351) says :

“ We know how careless Nature is of the lives of individuals ; we have seen how careless she is of eminent families, how they are built up, flourish, and decay.”

By admission, I think, these eminent families are not related one to another by distinctive blood.

It would appear to follow that there is, as a rule, inheritance in the race of a general average of natural ability.

But by the law of deviation from an average this general average is subject to particular variations or deviations. In some individuals ability falls below the average, in others ability rises above the average ; but the particular variations survive for only a few generations. Illustrious and even eminent men are but the deviations from an average which necessarily exist under the law of average. They are subjects of heredity, but not as a fixed distinctive class. The degree of their exceptional ability depends directly on the inheritance in the race of a particular grade of average ability. If they were bred as a distinct class they would degrade mentally in specialization. So far, and so far only, Mr. Galton would appear to have proved his case.

In his consideration of eminent and illustrious men Mr. Galton neglects almost entirely the influence of environments, and thereby treats the average ability of the race as much lower than it really is, while unduly enhancing the ability of the few.

There never has been, never can be, action by natural, not domestic, selection to evolve inherited power as commanders, statesmen, or Judges. Under society as constituted these classes are necessarily very small, and they are not distinct in blood, so that there is nothing for natural selection to act on. Mental capacity is not a simple thing like the colour of a bird, the form of a horse, the shape of a peacock. It is made up of infinite complexities, so that, for natural selection to affect it in evolution, there

must be a very large class and long periods of time. Natural selection has never "specialized" commanders, statesmen, or Judges, nor has man ever evolved them by domestic breeding.

Mr. Galton takes reputation (achievement) as his measure of natural ability. But the inherited natural ability of any individual is quite as likely to be latent as patent, and for achievement ability must be patent. So he does not deal at all with inherited latent ability. Not only this: he deals but with a class of patent ability. The walks in life for the achievements of natural ability are few and restricted. The reserve of capacity or power (the latent power) of man's mental ability is like to that of the violin—it is always capable of higher "expression" than its environments permit. However great an individual's natural ability, Mr. Galton ignores it unless it has achieved. He deals only with that class of patent ability which not only gives power to succeed, but has succeeded in certain paths determined and restricted by environments.

Achievement as commander, statesman, or Judge is open only to a very small restricted class, so such achievement can in no way be a measure of the natural abilities of the race.

If we consider the eminent relations of the illustrious commanders, statesmen, and Judges that Mr. Galton relies on, we shall find a certain rule apply almost without exception. It is this: the greater the social power, wealth, and personal interest of the man in case, the greater the number of his eminent relations, and the more exclusive the positions they have attained to. This must result

almost entirely from the influence of environment. I not only allege that, for example, Buonaparte's many eminent relations would never have been heard of if he himself had not attained his exceptional position, but I might almost throw out a general challenge : let Mr. Galton take any number of illustrious or eminent commanders, statesmen, and Judges ; let him tell me nothing of their mental ability, but let him tell me what their rank, social standing, and wealth are, and whether they inherited or did not inherit these favourable environments ; then I think I might tell him, not only whether they have or have not eminent relations, but in what directions their eminent relations have or have not achieved.

Of course, there are exceptions to the rule I lay down, but the exceptions are so few that if Mr. Galton treats me fairly by not picking out these exceptions, I believe my replies would be close to the truth.

If this be so, then it is not the inheritance alone of natural ability, but the inheritance also of favourable environments, which determine the eminence (in achievement) of a man's relations.

In art, science, and literature this rule does not apply so closely, but it has some application. At the same time, I think dimly that, for these three, natural selection may always have a large class to deal with in evolution. Nature, its beauties and its mysteries, the expression to others of our thoughts, are the environments of the race. Art, science, and literature are wide fields open to every one of us, if not trodden and examined by us all. They may,

probably do, affect unconsciously the most indifferent ; they are not restricted in themselves, and for a restricted class, as are the fields of warfare, statesmanship, and that of Judges. If this be so, then the reserve of capacity (force) in human nature will be always striving for expression in art, science, and literature, and natural selection has wide material to act on. For, with humanity, the law of survival of the fittest does not apply only to struggles for physical superiority or material possession or power : this law applies also to the struggle of this reserve of mental capacity to conquer its environments for its own use. And this means constant struggle to fathom the beauties of nature, wrest from it its secrets, and to express in language these higher forms of feeling and knowledge. These are the direct means in the hands of the organism, man, for ultimate conquest over his material environments. So we may, perhaps, find that not only is the whole race evolving in its average ability touching art, science, and literature, but that herein there is family inheritance over comparatively long periods.

But even for art, science, and literature, I regret to say, environment has still such effect that I could give a shrewd guess at the eminent relations and their mode of achievement of any man illustrious in art, science, and literature if I knew but what I have asked to be told of commanders, statesmen, and Judges.

¶ Mr. Galton does not touch on what I hold to be a most important truth—that at any given period the average natural ability of a race is incapable, from

restrictive environments, of reasonable exercise ; that the mental capacity of man has always a great reserve of unused capacity, force, or energy. But still, there is nothing in what he has written to controvert this truth.

If our race of 40,000,000 were made up of Buonapartes, Pitts, and Eldons, Turners, Darwins, and Shakspères, there would still be very few commanders, statesmen, and Judges, for the number of such men, as I have before shown, is fixed by environment. Even in art, science, and literature I doubt that we should suffer from a plethora of conflicting genius ; some few, whether from chance, fashion, or sheer personality, would probably be marked above their fellows.

Thus we see that, admitting Mr. Galton's facts up to the hilt, he does not touch on the question of what is really the average level of ability of the race. In taking reputation (achievement) as his measure, he is dealing with environments, for, whatever this average level of ability, the number of commanders, statesmen, and Judges relative to the number of the race will be the same ; the relation is wholly determined by circumstance—that is, by environment.

By my own argument this relation fails when we consider men of art, science, and literature, for I admit that the number of such men distinguished in power is probably increasing relatively to the number of the race. But if we take achievement as a measure of ability the relation stands good, for whatever the number of men distinguished in mental ability touching art, science, and literature, the number of those marked by achievement—that is,

who have established popular reputation—will be conditioned by environments.

In replying to Mr. Galton I lay great stress on, as I submit, this fact of the reserve of capacity or force in the human intellect—the fact that brain-power is, at all periods, capable of greater performance than it reveals in action.

In what follows I assume that this reserve of force has real existence, and that it accounts not only for variation, but for the fact that, under natural selection, the organism, man, always advances in the complex power of his brain, and so advances in command over the material—his environments.

## CHAPTER XXIII

### THE TRUE REMEDY

If any remedy for the existing evils of our society is necessary, I have tried to show that it cannot be found in any change of the average level of mental ability of the race, or in the domestic breeding of eminent or illustrious men. It must be found in change of environment.

The race can do nothing directly to change its average level of natural ability ; it cannot breed a stable class of eminent and illustrious men. But mankind has already advanced so far in evolution that it has power to modify, even change, its environments.

In spite of Mr. Galton's own theory as to hereditary genius, I am not sure that he wholly disagrees with what is above written, for (p. 362) he says :

" The best form of civilization in respect to the improvement of the race would be one in which society was not costly ; where incomes were chiefly derived from professional sources, and not much through inheritance ; where every lad had a chance of showing his ability, and, if highly gifted, was enabled to achieve a first-class education and entrance into professional life by the liberal help of the ex-

hibitions and scholarships which he had gained in his early youth ; where marriage was held in as high honour as in ancient Jewish times ; where the pride of race was encouraged (of course, I do not refer to the nonsensical sentiment of the present day that goes under that name) ; where the weak could find a welcome and a refuge in celibate monasteries or sisterhoods ; and, lastly, where the better sort of emigrants and refugees from other lands were invited and welcomed, and their descendants naturalized.”

If this be taken as his ideal for the civilization of our race, it is clear that he relies mainly for improvement, not on attempts to interfere directly with the ability of the race, but on change of environment. The only exception to this is in his suggestion that celibacy should be enforced on the weak. If this were possible—it is impossible—it would still have little or no effect for good so long as human environments remain so harshly restrictive that the moral and intellectual powers of the overwhelming majority of our race are crushed down to extinction in self-expression ; and, too, we do not know, in relation to mental ability, latent or patent, who are the weak.

If the arguments I have put forward are well based, then no change of environments can establish a sudden rise in the level of the average natural ability of a race ; it can establish only a sudden rise in the educated natural ability of the race—that is, it can originate a state of circumstances under which the latent reserve force of natural ability can and will be brought into more effective action.

The evils we at present suffer from arise in no way from want of men adequate in ability to deal with the existing complexities of civilization. We have the men, but we cannot use them from the restrictive influences of environment.

Believing, as I do, that there is always a reserve of mental force in the race, and that natural selection, acting on the whole race, tends slowly to evolution in the average natural ability of the race, and so, slowly, to improvement in environments, it would at first thought appear that no change is necessary, even in environment.

But here comes in the difficulty : there has been, during the last fifty years or so, an astounding change in the material environments of the race—indeed, of all humanity. This change has been great and sudden ; it has upset the previously-existing relation of the individual to society and the State.

Revolution is in the air ; revolution has never resulted in the amelioration of the lot of any race. I feel very strongly that society and the State must take in hand the environments of our race if we are to keep on the broad road of slow and real advance.

The sudden and great changes of environment are these : within the last fifty years or so we have been enabled to move from place to place very much more quickly than ever before, and during this period, by greater knowledge, and so greater possible use of the forces of nature, the effective labour of the average man has been largely increased. At the same time, the human population of the world has grown so unwieldy that the interests of masses

of men rather than those of individuals must be considered.

This sudden and great change of environment has necessitated a higher form of *educated* natural ability in the average man, and, the State understanding this dimly, legislation has been introduced to provide this higher form of educated natural ability for the average man.

The result is that the previously existing relation between the individual, on the one hand, and society and the State on the other, has been suddenly changed.

Society is made up of a small body of individuals possessing property, and a very large body of individuals without property working at the will of the few. No change of environment could of itself affect the stability of a society so constituted ; but when, as is the case now, this change of environment is of such a nature as to be accompanied by a rise in the level of the educated natural ability of the average man, then such a state of society becomes unstable.

If the outbursts of socialistic ideas and movements, the increase of the numbers of so-called socialists, and the advance of socialism as a political power be considered, all can be referred to the rising level of the educated natural ability of the average man as the moving force.

The average man has grown suddenly and unexpectedly ; he finds the clothes of his grandparents too small for him. *Sartor Resartus* might be a good cry for a new political party.

Competition in trade has evolved from strife

between man and man, class and class, to competition between State and State. Each State now recognises that to maintain its position it must be constantly raising the level of the educated natural ability of its inhabitants. If this level be constantly raised there must come a time, unless preventive means are taken, when society as constituted will become so unstable that it must fall.

So long as labour could not band together for offence and defence it mattered little what happened to the few ; the many accepted the always-present risk of failure to obtain work as one of the necessities of human existence.

But when, as now, labour can and does band together for offence and defence, the few think and act, not for themselves, but for the many ; each individual no longer constitutes a separate entity striving alone for his own personal welfare, so that no longer can the labour of the many be exploited by the few employing it. The thought and action of each individual is merged in the thought and action of all, considered as one body ; and this body will act on general principles inuring, it is devoutly to be hoped, for the benefit of each individual. The interests of the individual are recognised as the interests of his neighbours.

Thus we find, for the first time in the history of humanity, capitalists as a class faced by workmen as a class, every member of the latter class having a higher level of educated natural ability than ever before known.

It is no part of my present object to define the new problems set before the State for solution. I

have but to show how great and sudden a change there has been in the environments of the race, and how great and sudden has been the accompanying change from the rise of the level of the average educated natural ability of the race. Whatever these problems may be, it is fact that the State must take into consideration not only the new environments of the race, but the positive and real change in the effective character of every individual of the race.

We cannot change the average standard of ability of the race ; we cannot breed a class of men to govern us ; but it is a serious question whether the great and sudden changes I have referred to do not, for safe and sure progress, require timely action on the part of the State.

THE END





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